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TECHNICAL NOTE 4063

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EQUATIONS, TABLES, AND FIGURES FOR USE IN THE  
ANALYSIS OF HELIUM FLOW AT SUPERSONIC  
AND HYPERSONIC SPEEDS

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EQUATIONS, TABLES, AND FIGURES FOR USE IN THE  
ANALYSIS OF HELIUM FLOW AT SUPERSONIC  
AND HYPERSONIC SPEEDS

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## SUMMARY

This report presents equations, tables, and figures for use in the analysis of helium flow at supersonic and hypersonic speeds. The contents of the report and presentation of the data parallel that of a similar reference work (NACA Rep. 1135) prepared for air flow.

The perfect-gas relations for continuous one-dimensional flow, normal- and oblique-shock waves, and Prandtl-Meyer expansions are the same as for air but are presented here for completeness. The tables present the values of useful dimensionless ratios for continuous one-dimensional flow and for normal-shock waves as functions of Mach number. The helium viscosity relation as a function of temperature, mass-flow rates as a function of Mach number and temperature, and the Reynolds number as a function of Mach number and stagnation temperature are plotted. The oblique-shock characteristics of wedges and cones in helium at Mach numbers of 12, 16, 20, and 24 are presented in a series of plots. Throughout all the computations, helium is considered to be a perfect gas.

## INTRODUCTION

The use of helium as a flow medium in wind-tunnel investigations has proved to be feasible for the purpose of attaining test Mach numbers much higher than is now possible in air. (See ref. 1.) Test results (refs. 2 and 3) have shown the usefulness of helium tunnels in fundamental gas-dynamics studies, and the use of helium in conventional aerodynamic studies appears to be promising (ref. 4). In reference 4, the results of a study of the inviscid effects of the difference in the ratio of specific heats for helium and air have indicated that the conversion of experimental force data obtained in helium to equivalent data obtained in air might not be overly complex. The potentiality, then, of the increased use of helium test facilities has produced the need for a reference work containing the flow properties of helium and related information.

The purpose of the present report is to compile a reference work for helium similar to that of reference 5 which is for air. The form of the report follows, in general, that of reference 5; however, derivations of the various fundamental thermodynamic and compressible-flow relationships included in reference 5, which are also applicable for helium, are omitted in the present work and only perfect-gas effects are considered. Maximum use of the tabular form of data presentation is made in order to present the various flow quantities as accurately as possible. Figures are used to present viscosity-temperature relations; mass-flow rates; Reynolds number, Mach number, and temperature relations; and illustrations of two- and three-dimensional oblique-shock relations. The Mach number range covered by the tables and figures is from 1 to 40. Also included is a short bibliography of several sources of information pertaining to the characteristics of helium gas.

#### SYMBOLS

A	cross-sectional area of stream tube or channel, sq in.
a	speed of sound, ft/sec
c <sub>p</sub>	specific heat at constant pressure, ft <sup>2</sup> /sec <sup>2</sup> -°R
c <sub>v</sub>	specific heat at constant volume, ft <sup>2</sup> /sec <sup>2</sup> -°R
l	characteristic reference length, ft
M	Mach number, V/a
N <sub>Re</sub>	Reynolds number, ρVl/η
p	pressure, lb/sq ft
q	dynamic pressure, $\frac{1}{2} \rho M^2$
R	gas constant
T	absolute temperature, °R
t	temperature, °F
V	speed of flow, ft/sec
V <sub>0</sub>	maximum speed obtainable by expanding to zero absolute pressure

$\gamma$	ratio of specific heats, $c_p/c_v$
$\delta$	angle of flow deflection across an oblique-shock wave or wedge angle, deg
$\epsilon$	shock-wave angle measured from upstream flow direction, deg
$\eta$	absolute viscosity, slugs/ft-sec
$\mu$	Mach angle, $\sin^{-1} \frac{1}{M}$
$\nu$	Prandtl-Meyer angle (angle through which a supersonic stream is turned to expand from $M = 1$ to $M > 1$ ), deg
$\rho$	mass density, slugs/cu ft
$\sigma$	semivertex angle of cone, deg

Subscripts and superscripts:

$c$	conditions on surface of cone
$t$	total conditions (that is, conditions that would exist if the gas were brought to rest isentropically)
$1$	condition just upstream of shock wave
$2$	condition just downstream of shock wave
$\infty$	free-stream conditions
*	critical conditions (that is, conditions where local speed is equal to local speed of sound)

#### FUNDAMENTAL FLOW EQUATIONS

The fundamental flow equations are applicable for all perfect gases and have been given in many other publications (for example, ref. 5); however, they are presented herein for completeness.

#### Continuous One-Dimensional Flow

The basic equations for the continuous flow of an inviscid perfect gas along a streamline are given in reference 5, along with useful relations expressing various dimensionless ratios as functions of a single

parameter. These dimensionless relations are given below with the Mach number used as the independent variable. In each case the second form of the equation applies for  $\gamma = 5/3$ .

The notation in brackets [ ] after the equations signifies that the equation is valid only within certain limitations. For example,

- [perf] the equation is restricted to a gas which is both thermally and calorically perfect
- [isen] the flow process must take place isentropically
- [adiab] the only restriction on the flow process is that it must take place adiabatically - that is, without heat transfer.

$$\frac{p}{p_t} = \left(1 + \frac{\gamma - 1}{2} M^2\right)^{-\frac{\gamma}{\gamma-1}} = \left(1 + \frac{M^2}{3}\right)^{-5/2} \quad [\text{isen, perf}] \quad (1)$$

$$\frac{\rho}{p_t} = \left(1 + \frac{\gamma - 1}{2} M^2\right)^{-\frac{\gamma}{\gamma-1}} = \left(1 + \frac{M^2}{3}\right)^{-3/2} \quad [\text{isen, perf}] \quad (2)$$

$$\frac{T}{T_t} = \left(1 + \frac{\gamma - 1}{2} M^2\right)^{-1} = \left(1 + \frac{M^2}{3}\right)^{-1} \quad [\text{adiab, perf}] \quad (3)$$

$$\frac{a}{a_t} = \left(1 + \frac{\gamma - 1}{2} M^2\right)^{-1/2} = \left(1 + \frac{M^2}{3}\right)^{-1/2} \quad [\text{adiab, perf}] \quad (4)$$

$$\frac{q}{p_t} = \frac{\gamma}{2} M^2 \left(1 + \frac{\gamma - 1}{2} M^2\right)^{-\frac{\gamma}{\gamma-1}} = \frac{5}{6} M^2 \left(1 + \frac{M^2}{3}\right)^{-5/2} \quad [\text{isen, perf}] \quad (5)$$

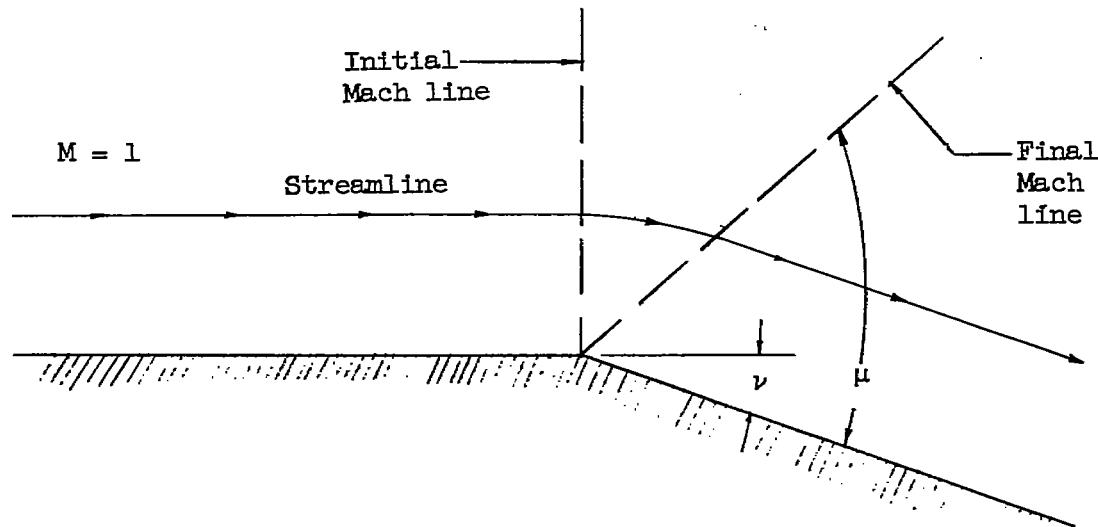
$$\frac{A^*}{A} = \left(\frac{\gamma + 1}{2}\right)^{\frac{\gamma+1}{2(\gamma-1)}} M \left(1 + \frac{\gamma - 1}{2} M^2\right)^{-\frac{\gamma+1}{2(\gamma-1)}} = \frac{16}{9} M \left(1 + \frac{M^2}{3}\right)^{-2} \quad [\text{isen, perf}] \quad (6)$$

$$\left(\frac{v}{v_0}\right)^2 = \frac{\gamma - 1}{2} M^2 \left(1 + \frac{\gamma - 1}{2} M^2\right)^{-1} = \frac{M^2}{3} \left(1 + \frac{M^2}{3}\right)^{-1} \quad [\text{adiab, perf}] \quad (7)$$

$$\left(\frac{v}{a^*}\right)^2 = \frac{\gamma + 1}{2} M^2 \left(1 + \frac{\gamma - 1}{2} M^2\right)^{-1} = \frac{4M^2}{3} \left(1 + \frac{M^2}{3}\right)^{-1} \quad [\text{adiab, perf}] \quad (8)$$

### Prandtl-Meyer Expansion

A uniform two-dimensional supersonic stream flowing over a convex bend expands isentropically. A convenient relation for the Prandtl-Meyer angle  $\nu$  through which the stream turns can be found by considering the special case of a stream at a Mach number of 1 flowing around a corner. See the following sketch of the Prandtl-Meyer expansion:



For a perfect gas, the Prandtl-Meyer angle  $\nu$  through which the stream turns in expanding from a Mach number of 1 to a supersonic Mach number is

$$\nu = \sqrt{\frac{\gamma + 1}{\gamma - 1}} \tan^{-1} \sqrt{\frac{\gamma - 1}{\gamma + 1} (M^2 - 1)} - \tan^{-1} \sqrt{M^2 - 1} = \tan^{-1} \frac{(M^2 - 1)^{3/2}}{3M^2 + 1} \quad (9a)$$

As a matter of interest an analytic inversion of the Prandtl-Meyer equation (eq. (9a)) is possible for values of specific-heat ratio of  $5/3$  and  $5/4$ ; and the Langley Laboratory has used the inverted equation for  $\gamma = 5/3$  in the form

$$\tan \mu = \frac{1}{2} \left[ \left( \frac{\cos \nu + 1}{\sin \nu} \right)^{1/3} + \left( \frac{\cos \nu - 1}{\sin \nu} \right)^{1/3} \right] \quad (9b)$$

for some time. Recently, a formal presentation of the analytic inversion of equation (9a) for  $\gamma = 5/3$  and  $\gamma = 5/4$  by Probstein (ref. 6) has become available. For  $\gamma = 5/3$ , the inverted equation is given in the form

$$M = \frac{1 + \left( \tan \frac{\nu}{2} \right)^{2/3}}{1 - \left( \tan \frac{\nu}{2} \right)^{2/3}} \quad (9c)$$

The usefulness of the inverted equation is readily seen in that it allows the local Mach number to be expressed explicitly as a function of the turning angle. The Mach angle of the flow  $\mu$  is given, of course, by the relation

$$\mu = \sin^{-1} \frac{1}{M} \quad (10)$$

#### Normal-Shock-Wave Relations

Many of the more useful relations for normal-shock waves are conveniently expressed in terms of upstream Mach number  $M_1$ . The following relations, using  $M_1$  as the independent variable, apply to adiabatic flow of a perfect fluid:

$$M_2^2 = \frac{(\gamma - 1)M_1^2 + 2}{2\gamma M_1^2 - (\gamma - 1)} = \frac{M_1^2 + 3}{5M_1^2 - 1} \quad (11)$$

$$\frac{p_2}{p_1} = \frac{2\gamma M_1^2 - (\gamma - 1)}{\gamma + 1} = \frac{5M_1^2 - 1}{4} \quad (12)$$

$$\frac{p_2}{p_1} = \frac{(\gamma + 1)M_1^2}{(\gamma - 1)M_1^2 + 2} = \frac{4M_1^2}{M_1^2 + 3} \quad (13)$$

$$\frac{T_2}{T_1} = \frac{[2\gamma M_1^2 - (\gamma - 1)] [(\gamma - 1)M_1^2 + 2]}{(\gamma + 1)^2 M_1^2} = \frac{5M_1^4 + 14M_1^2 - 3}{16M_1^2} \quad (14)$$

$$\frac{p_{t,2}}{p_{t,1}} = \left[ \frac{(\gamma + 1)M_1^2}{(\gamma - 1)M_1^2 + 2} \right]^{\frac{\gamma}{\gamma-1}} \left[ \frac{\gamma + 1}{2\gamma M_1^2 - (\gamma - 1)} \right]^{\frac{1}{\gamma-1}} = \left( \frac{4M_1^2}{M_1^2 + 3} \right)^{5/2} \left( \frac{4}{5M_1^2 - 1} \right)^{3/2} \quad (15)$$

$$\frac{p_{t,2}}{p_1} = \left[ \frac{(\gamma + 1)M_1^2}{2} \right]^{\frac{\gamma}{\gamma-1}} \left[ \frac{\gamma + 1}{2\gamma M_1^2 - (\gamma - 1)} \right]^{\frac{1}{\gamma-1}} = \left( \frac{4M_1^2}{3} \right)^{5/2} \left( \frac{4}{5M_1^2 - 1} \right)^{3/2} \quad (16)$$

(Equation (16) is known as the supersonic pitot-tube equation or Rayleigh's formula.)

The values of the ratios presented in equations (1) to (16) are given in table I for the Mach number range 1 to 40 in 0.01 increments of Mach number.

### Oblique-Shock-Wave Relations

An oblique-shock wave acts as a normal shock to the flow perpendicular to it; therefore, the pressure relations for normal-shock waves (except for the ratio of static pressure to total pressure  $p_1/p_{t,2}$ ) apply to oblique shocks if  $M_1$  and  $M_2$  are replaced by their normal components,  $M_1 \sin \epsilon$  and  $M_2 \sin(\epsilon - \delta)$  as shown below:

$$\frac{p_2}{p_1} = \frac{2\gamma M_1^2 \sin^2 \epsilon - (\gamma - 1)}{\gamma + 1} = \frac{5M_1^2 \sin^2 \epsilon - 1}{4} \quad (17)$$

$$\frac{\rho_2}{\rho_1} = \frac{(\gamma + 1)M_1^2 \sin^2 \epsilon}{(\gamma - 1)M_1^2 \sin^2 \epsilon + 2} = \frac{4M_1^2 \sin^2 \epsilon}{M_1^2 \sin^2 \epsilon + 3} \quad (18)$$

$$\begin{aligned} \frac{T_2}{T_1} &= \frac{[2\gamma M_1^2 \sin^2 \epsilon - (\gamma - 1)][(\gamma - 1)M_1^2 \sin^2 \epsilon + 2]}{(\gamma + 1)^2 M_1^2 \sin^2 \epsilon} \\ &= \frac{(5M_1^2 \sin^2 \epsilon - 1)(M_1^2 \sin^2 \epsilon + 3)}{16M_1^2 \sin^2 \epsilon} \end{aligned} \quad (19)$$

$$\frac{M_2^2 \sin^2(\epsilon - \delta)}{2\gamma M_1^2 \sin^2 \epsilon - (\gamma - 1)} = \frac{(\gamma - 1) M_1^2 \sin^2 \epsilon + 2}{5M_1^2 \sin^2 \epsilon - 1} = \frac{M_1^2 \sin^2 \epsilon + 3}{5M_1^2 \sin^2 \epsilon - 1} \quad (20)$$

The deviation of the flow  $\delta$  across an oblique shock is obtainable from the relation

$$\frac{1}{\tan \delta} = \left( \frac{\gamma + 1}{2} \frac{M_1^2}{M_1^2 \sin^2 \epsilon - 1} - 1 \right) \tan \epsilon = \left( \frac{4}{3} \frac{M_1^2}{M_1^2 \sin^2 \epsilon - 1} - 1 \right) \tan \epsilon \quad (21)$$

### VISCOSITY RELATION AND THERMODYNAMIC CONSTANTS

#### Viscosity Relation

The equation for the determination of the viscosity of helium was taken from reference 7 and is as follows:

$$\eta = 8.315T^{0.647} \times 10^{-4} \quad (22)$$

where

$\eta$  viscosity, lb(Mass)/hr-ft

T absolute temperature,  $^{\circ}$ R

$T = t + 459.69$

t temperature,  $^{\circ}$ F

The helium viscosity relation, converted to units of slugs per foot-second, is plotted in figure 1 for a range of temperature from  $10^{\circ}$  R to  $1,300^{\circ}$  R. The converted equation is

$$\eta = 7.173T^{0.647} \times 10^{-9} \quad (22a)$$

where

T absolute temperature,  $^{\circ}$ R

$\eta$  viscosity, slugs/ft-sec

### Thermodynamic Constants

The value of the ratio of specific heats for helium is  $\gamma = 5/3$  when it is treated as a completely perfect gas. Values of  $c_p$ ,  $c_v$ , and  $R$  for helium are

$$c_p = 31,089 \text{ ft}^2/\text{sec}^2 \cdot {}^\circ\text{R}$$

$$c_v = 18,651 \text{ ft}^2/\text{sec}^2 \cdot {}^\circ\text{R}$$

$$R = 12,438 \text{ ft}^2/\text{sec}^2 \cdot {}^\circ\text{R}$$

### REYNOLDS NUMBER

The Reynolds number is defined as:

$$N_{Re} = \frac{\rho V l}{\eta}$$

This parameter can be put into the form

$$\frac{N_{Re}}{l} = \frac{1.938 M_\infty \times 10^7}{T_t^{1.147} \left(1 + \frac{M_\infty^2}{3}\right)^{1.353} p_t} \quad (23)$$

through use of the helium viscosity equation and other fundamental relationships. In equation (23)  $p_t$  is in pounds per square inch absolute, the characteristic length  $l$  is in inches, and  $T_t$  is in degrees Rankine. The graph of equation (23) is shown in figure 2. It should be pointed out that the curves shown in figure 2 are based on a value of  $p_t$  of unity to facilitate their use.

### MASS-FLOW RATE

The following equations, combined with equations (2) and (4), are used to obtain the mass-flow rate per unit area  $\rho V$  along a stream tube as a function of Mach number, total temperature, and total pressure.

$$\rho A V = \text{Constant} = \rho^* A^* V^* \quad (24)$$

$$\frac{p}{\rho} = RT \quad (25)$$

$$a = \sqrt{\gamma \frac{p}{\rho}} = \sqrt{\gamma RT} \quad (26)$$

Numerical values can be obtained from figure 3 where the variation with Mach number of the mass-flow rate per unit cross-sectional area is presented for various total temperatures and a total pressure of 1 pound per square inch absolute.

#### OBLIQUE-SHOCK CHARACTERISTICS OF WEDGES AND CONES

The oblique-shock characteristics of wedges and cones are presented in figures 4 to 9 and figures 10 to 15, respectively, for Mach numbers of 12, 16, 20, and 24. The figures for the wedge characteristics (figs. 4 to 9) show the dependence of shock-wave angle, Mach number behind the shock, and pressure ratio through the oblique shock on wedge angle; whereas the cone figures (figs. 10 to 15) show the dependence of shock-wave angle, limiting velocity ratio along the surface of the cone, and cone surface pressure on cone semivertex angle. The method of calculation used to obtain the conical-flow solutions presented in figures 10 to 15 is given in detail in reference 8. The equations presented in reference 8 are readily adaptable to automatic computing procedure and were solved mechanically.

#### CONCLUDING REMARKS

Equations, tables, and figures for use in the analysis of helium flow at supersonic and hypersonic flow have been presented. This paper parallels NACA Report 1135 which was prepared for air flow. The tables present the values of useful dimensionless ratios for continuous one-dimensional flow and for normal-shock waves as functions of Mach number. The helium viscosity relation as a function of temperature, mass-flow rates, and the Reynolds number as a function of Mach number and stagnation temperature are plotted. The oblique-shock characteristics of wedges and cones in helium at Mach numbers of 12, 16, 20, and 24 are presented. Throughout all the computations, helium is considered to be a perfect gas.

Langley Aeronautical Laboratory,  
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 Langley Field. Va., May 1, 1957.

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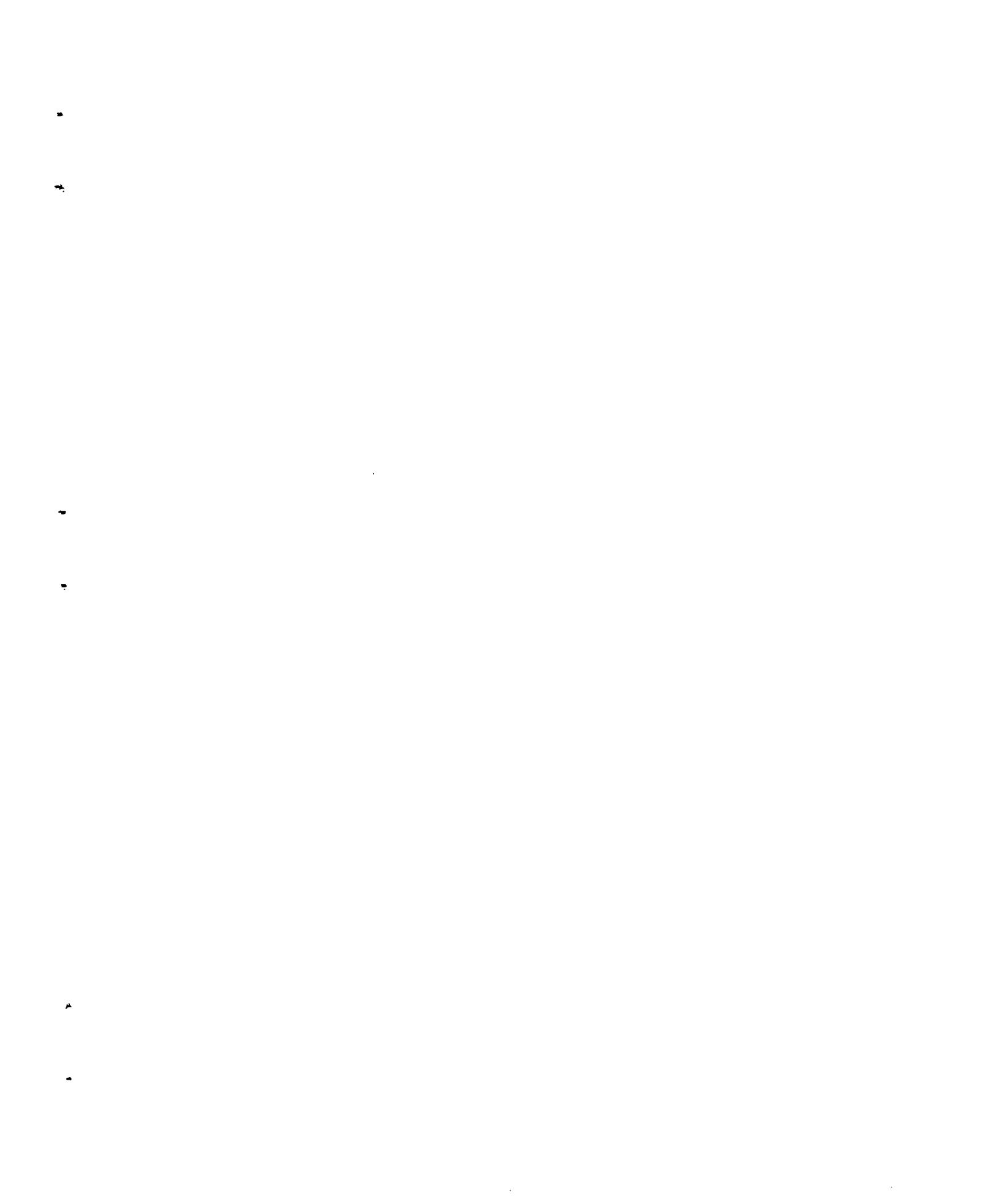


TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	w/w <sub>t</sub>	q/P <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>t</sub>	V/A <sup>*</sup>
1.00	.4871	.6495	.7500	.8660	.4059	1.0000	.5000	1.000000
1.01	.4811	.6447	.7463	.8639	.4090	.9999	.5037	1.00747
1.02	.4751	.6398	.7425	.8607	.4119	.9997	.5074	1.01489
1.03	.4691	.6350	.7388	.8555	.4147	.9995	.5112	1.02828
1.04	.4632	.6302	.7350	.8513	.4175	.9993	.5148	1.03828
1.05	.4573	.6253	.7313	.8471	.4201	.9990	.5184	1.03628
1.06	.4515	.6205	.7275	.8429	.4227	.9974	.5220	1.03199
1.07	.4457	.6158	.7238	.8398	.4252	.9965	.5256	1.03113
1.08	.4399	.6110	.7200	.8366	.4276	.9955	.5291	1.035821
1.09	.4343	.6063	.7163	.8344	.4300	.9943	.5326	1.036824
1.10	.4286	.5915	.7126	.8312	.4322	.9930	.5361	1.037221
1.11	.4229	.5867	.7089	.8280	.4345	.9916	.5396	1.038620
1.12	.4173	.5821	.7051	.8257	.4368	.9901	.5430	1.039881
1.13	.4117	.5775	.7014	.8235	.4395	.9884	.5464	1.039886
1.14	.4061	.5730	.6977	.8213	.4424	.9867	.5498	1.039887
1.15	.4013	.5684	.6940	.8191	.4452	.9848	.5531	1.039887
1.16	.3966	.5636	.6904	.8169	.4480	.9829	.5565	1.03298
1.17	.3907	.5590	.6867	.8147	.4507	.9808	.5598	1.031951
1.18	.3858	.5545	.6830	.8125	.4535	.9786	.5630	1.03006
1.19	.3804	.5509	.6793	.8102	.4563	.9763	.5663	1.028886
1.20	.3753	.5554	.6757	.8080	.4603	.9739	.5695	1.03889
1.21	.3708	.5509	.6720	.8058	.4617	.9715	.5727	1.04538
1.22	.3663	.5464	.6684	.8026	.4630	.9689	.5759	1.05171
1.23	.3619	.5419	.6648	.8001	.4654	.9663	.5790	1.05800
1.24	.3554	.5376	.6611	.7976	.4678	.9636	.5821	1.06423
1.25	.3506	.5332	.6575	.7959	.4705	.9608	.5852	1.07041
1.26	.3458	.5288	.6539	.7907	.4732	.9579	.5883	1.07884
1.27	.3412	.5245	.6494	.7874	.4759	.9551	.5913	1.08686
1.28	.3364	.5208	.6458	.7842	.4785	.9519	.5943	1.09464
1.29	.3318	.5163	.6423	.7809	.4801	.9486	.5973	1.09464
1.30	.3272	.5116	.6397	.7798	.4809	.9456	.6003	1.08057
1.31	.3237	.5073	.6361	.7766	.4815	.9484	.6039	1.08045
1.32	.3193	.5031	.6326	.7734	.4821	.9391	.6061	1.08228
1.33	.3095	.4989	.6289	.7701	.4827	.9357	.6090	1.08107
1.34	.3057	.4948	.6253	.7666	.4841	.9333	.6119	1.08107
1.35	.3018	.4907	.6217	.7633	.4857	.9308	.6149	1.08107
1.36	.2980	.4865	.6181	.7600	.4875	.9283	.6176	1.08314
1.37	.2942	.4825	.6151	.7568	.4892	.9259	.6204	1.084073
1.38	.2904	.4784	.6117	.7531	.4910	.9231	.6231	1.08428
1.39	.2866	.4744	.6083	.7499	.4946	.9143	.6259	1.084178
1.40	.2828	.4704	.6048	.7777	.4977	.9105	.6286	1.08572
1.41	.2790	.4663	.6014	.7755	.4995	.9077	.6314	1.08572
1.42	.2752	.4620	.5980	.7733	.5017	.9049	.6340	1.085501
1.43	.2714	.4580	.5947	.7711	.5047	.8990	.6367	1.087331
1.44	.2679	.4547	.5913	.7680	.5066	.8951	.6393	1.087660
1.45	.2645	.4508	.5879	.7648	.5084	.8911	.6419	1.088583
1.46	.2613	.4470	.5846	.7616	.5102	.8871	.6445	1.089901
1.47	.2576	.4438	.5813	.7584	.5120	.8831	.6471	1.089418
1.48	.2540	.4394	.5780	.7553	.5138	.8790	.6496	1.089925
1.49	.2504	.4357	.5747	.7521	.5156	.8749	.6521	1.090430
1.50	.2468	.4320	.5714	.7559	.4628	.8707	.6547	1.09391
1.51	.2433	.4283	.5682	.7526	.4653	.8666	.6571	1.09497
1.52	.2399	.4246	.5649	.7516	.4678	.8624	.6596	1.09190
1.53	.2365	.4210	.5617	.7495	.4693	.8588	.6620	1.09208
1.54	.2331	.4174	.5585	.7473	.4707	.8540	.6645	1.09292
1.55	.2298	.4138	.5553	.7452	.4725	.8497	.6669	1.093378
1.56	.2265	.4103	.5521	.7430	.4744	.8454	.6698	1.093848
1.57	.2233	.4067	.5490	.7409	.4762	.8411	.6716	1.094319
1.58	.2201	.4038	.5458	.7388	.4779	.8388	.6739	1.094787
1.59	.2170	.3998	.5427	.7367	.4797	.8325	.6763	1.095231
1.60	.2139	.3963	.5396	.7346	.4828	.8281	.6786	1.09710
1.61	.2108	.3929	.5365	.7324	.4853	.8258	.6808	1.09616
1.62	.2078	.3896	.5334	.7303	.4874	.8234	.6831	1.09616
1.63	.2048	.3864	.5303	.7282	.4895	.8150	.6853	1.09766
1.64	.2019	.3829	.5273	.7261	.4915	.8125	.6875	1.097510
1.65	.1990	.3797	.5242	.7240	.4935	.8097	.6897	1.09780
1.66	.1963	.3765	.5211	.7219	.4954	.8068	.6919	1.09819
1.67	.1935	.3733	.5180	.7198	.4973	.8041	.6941	1.09829
1.68	.1906	.3699	.5149	.7178	.4988	.7989	.6962	1.09848
1.69	.1878	.3667	.5123	.7157	.5011	.7885	.6984	1.09673
1.70	.1851	.3635	.5093	.7137	.5049	.7840	.7005	1.09095
1.71	.1825	.3604	.5064	.7116	.5077	.7796	.7026	1.09512
1.72	.1799	.3573	.5036	.7095	.5105	.7752	.7046	1.09587
1.73	.1773	.3542	.5006	.7074	.5128	.7707	.7067	1.09588
1.74	.1748	.3511	.4977	.7053	.5149	.7663	.7087	1.09588
1.75	.1723	.3481	.4948	.7033	.5168	.7624	.7107	1.09588
1.76	.1698	.3451	.4918	.7014	.5183	.7574	.7127	1.09588
1.77	.1674	.3421	.4892	.6994	.5203	.7529	.7147	1.09588
1.78	.1650	.3398	.4863	.6974	.5222	.7485	.7167	1.095339
1.79	.1626	.3363	.4836	.6954	.5241	.7441	.7186	1.094372
1.80	.1603	.3334	.4808	.6934	.527	.7396	.7206	1.0915
1.81	.1580	.3304	.4780	.6913	.5303	.7352	.7225	1.0915
1.82	.1557	.3273	.4753	.6892	.5328	.7308	.7244	1.0915
1.83	.1535	.3248	.4725	.6874	.5353	.7264	.7263	1.091555
1.84	.1513	.3222	.4698	.6854	.5378	.7220	.7281	1.091555
1.85	.1491	.3192	.4671	.6835	.5403	.7176	.7300	1.09199
1.86	.1470	.3165	.4644	.6815	.5428	.7132	.7318	1.09266
1.87	.1449	.3138	.4618	.6795	.5452	.7088	.7336	1.092730
1.88	.1428	.3111	.4591	.6776	.5477	.7045	.7355	1.09291
1.89	.1408	.3084	.4565	.6756	.5491	.7001	.7372	1.09446
1.90	.1388	.3058	.4537	.6737	.5175	.6958	.7390	1.07803
1.91	.1368	.3031	.4513	.6718	.5159	.6924	.7408	1.08184
1.92	.1348	.3005	.4487	.6698	.5142	.6872	.7425	1.08203
1.93	.1329	.2980	.4461	.6679	.5126	.6828	.7442	1.08248
1.94	.1310	.2954	.4436	.6660	.5109	.6785	.7450	1.09191
1.95	.1292	.2929	.4410	.6641	.5093	.6748	.7460	1.09231
1.96	.1273	.2904	.4385	.6622	.5076	.6700	.7470	1.09266
1.97	.1255	.2879	.4360	.6603	.5059	.6667	.7510	1.09301
1.98	.1237	.2854	.4335	.6584	.5042	.6625	.7527	1.093032
1.99	.1220	.2830	.4310	.6565	.5025	.6583	.7543	1.09366

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/\rho_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/\rho_1$	$M$
90.00	.00000	1.00000	1.000	1.000	1.000	1.00000	2.053	1.000
81.93	.04021	.9901	1.025	1.015	1.010	1.00000	2.079	1.018
78.64	.11269	.9806	1.051	1.030	1.020	1.00000	2.105	1.033
76.14	.20387	.9713	1.076	1.050	1.040	1.00000	2.129	1.044
72.85	.35353	.9515	1.102	1.060	1.040	1.00000	2.159	1.055
70.63	.43649	.9355	1.128	1.090	1.059	1.00000	2.187	1.067
69.16	.56561	.9159	1.155	1.090	1.059	1.00000	2.215	1.077
67.81	.71359	.8957	1.181	1.105	1.069	1.00000	2.243	1.087
66.55	.86434	.8766	1.208	1.120	1.079	1.00000	2.272	1.096
	1.0240	0.9207	1.235	1.135	1.088	1.00000	2.301	1.099
65.38	1.19207	.9131	1.263	1.150	1.098	1.00000	2.331	1.100
64.26	1.54549	.8939	1.290	1.105	1.058	1.00000	2.361	1.112
62.25	1.73771	.8737	1.318	1.079	1.018	1.00000	2.391	1.123
61.31	1.91733	.8543	1.346	1.046	1.027	1.00000	2.422	1.145
60.41	2.11115	.8343	1.375	1.020	1.037	1.00000	2.453	1.164
59.55	2.30109	.8140	1.403	1.024	1.047	1.00000	2.484	1.185
58.73	2.51183	.7946	1.432	1.030	1.069	1.00000	2.516	1.205
57.94	2.71183	.7856	1.461	1.053	1.166	1.00000	2.548	1.217
57.16	2.92777	.7852	1.520	1.083	1.185	1.00000	2.581	1.216
56.44	3.1402	.8462	1.550	1.297	1.195	1.00000	2.647	1.280
55.74	3.35556	.8404	1.580	1.312	1.204	1.00000	2.681	1.293
55.05	3.5737	.8347	1.611	1.326	1.214	1.00000	2.715	1.304
54.39	3.7943	.8291	1.641	1.343	1.224	1.00000	2.749	1.324
53.75	4.0172	.8237	1.672	1.355	1.234	1.00000	2.784	1.344
53.13	4.24282	.8184	1.703	1.370	1.243	1.00000	2.819	1.355
52.53	4.4692	.8132	1.735	1.384	1.253	1.00000	2.854	1.366
51.94	4.69580	.8081	1.766	1.399	1.263	1.00000	2.890	1.377
50.82	5.1606	.7982	1.798	1.413	1.273	1.00000	2.926	1.388
50.26	5.3941	.7934	1.863	1.441	1.292	1.00000	2.959	1.390
49.76	5.6290	.7888	1.895	1.456	1.303	1.00000	3.036	1.311
49.25	5.86550	.7842	1.928	1.470	1.318	1.00000	3.073	1.333
48.75	6.10221	.7797	1.961	1.484	1.332	1.00000	3.111	1.353
48.27	6.3402	.7753	1.995	1.498	1.343	1.00000	3.149	1.373
47.79	6.67321	.7710	2.028	1.512	1.353	1.00000	3.177	1.395
47.35	6.98521	.7668	2.062	1.526	1.363	1.00000	3.205	1.415
46.88	7.0596	.7627	2.096	1.539	1.372	1.00000	3.235	1.437
46.44	7.30009	.7586	2.131	1.553	1.382	1.00000	3.265	1.457
46.01	7.5427	.7534	2.165	1.567	1.392	1.00000	3.293	1.479
45.58	7.7850	.7508	2.200	1.581	1.392	1.00000	3.324	1.490
45.17	8.0277	.7469	2.235	1.594	1.402	1.00000	3.424	1.491
44.77	8.27028	.7432	2.270	1.608	1.412	1.00000	3.454	1.495
44.37	8.51525	.7395	2.303	1.622	1.422	1.00000	3.508	1.515
44.00	8.75779	.7357	2.337	1.635	1.432	1.00000	3.535	1.534
43.66	9.00118	.7324	2.378	1.648	1.443	1.00000	3.588	1.554
43.33	9.24558	.7289	2.411	1.663	1.453	1.00000	3.630	1.574
42.86	9.48929	.7255	2.431	1.675	1.464	1.00000	3.672	1.594
42.51	9.7340	.7228	2.458	1.688	1.474	1.00000	3.714	1.614
42.16	9.9781	.7189	2.480	1.701	1.484	1.00000	3.757	1.649
41.81	10.228	.7157	2.500	1.714	1.495	1.00000	3.800	1.650
41.47	10.466	.7125	2.520	1.727	1.505	1.00000	3.844	1.651
40.81	10.710	.7094	2.538	1.740	1.516	1.00000	3.887	1.653
40.49	10.954	.7064	2.567	1.753	1.526	1.00000	3.931	1.653
40.18	11.197	.7034	2.595	1.766	1.537	1.00000	3.976	1.654
39.87	11.440	.7004	2.623	1.779	1.548	1.00000	4.020	1.655
39.56	11.683	.6975	2.650	1.792	1.558	1.00000	4.065	1.657
39.27	11.926	.6947	2.671	1.804	1.569	1.00000	4.111	1.659
38.97	12.168	.6919	2.681	1.817	1.579	1.00000	4.156	1.660
38.67	12.410	.6891	2.691	1.829	1.591	1.00000	4.202	1.669
38.38	12.652	.6864	2.950	1.842	1.602	1.00000	4.248	1.660
38.40	12.893	.6838	2.990	1.854	1.613	1.00000	4.295	1.661
38.12	13.134	.6812	3.031	1.866	1.624	1.00000	4.342	1.662
37.84	13.374	.6786	3.071	1.879	1.635	1.00000	4.389	1.663
37.57	13.613	.6761	3.118	1.891	1.646	1.00000	4.436	1.664
37.31	13.853	.6736	3.153	1.903	1.657	1.00000	4.482	1.665
37.74	14.094	.6711	3.184	1.915	1.668	1.00000	4.532	1.667
36.78	14.334	.6687	3.216	1.927	1.679	1.00000	4.582	1.668
36.53	14.567	.6664	3.248	1.939	1.691	1.00000	4.629	1.669
36.28	14.804	.6640	3.280	1.951	1.702	1.00000	4.678	1.679
36.03	15.040	.6618	3.363	1.963	1.713	1.00000	4.727	1.700
35.79	15.276	.6595	4.053	1.974	1.725	1.00000	4.777	1.711
35.55	15.511	.6572	4.086	1.986	1.736	1.00000	4.822	1.722
35.31	15.746	.6551	4.119	1.998	1.746	1.00000	4.867	1.733
35.08	16.979	.6529	5.318	2.009	1.759	1.00000	4.927	1.744
34.85	16.212	.6497	5.578	2.021	1.771	1.00000	4.975	1.755
34.62	16.444	.6467	5.622	2.033	1.782	1.00000	5.029	1.766
34.40	16.676	.6447	5.656	2.043	1.794	1.00000	5.080	1.777
34.18	16.907	.6427	5.711	2.055	1.806	1.00000	5.132	1.788
33.96	17.137	.6407	5.755	2.056	1.818	1.00000	5.184	1.799
33.75	17.366	.6386	8.00	2.077	1.830	1.00000	5.236	1.800
33.54	17.595	.6369	8.45	2.088	1.842	1.00000	5.289	1.812
33.33	17.823	.6350	8.91	2.099	1.854	1.00000	5.342	1.823
32.92	18.050	.6332	9.38	2.101	1.866	1.00000	5.393	1.833
32.72	18.276	.6314	9.86	2.121	1.878	1.00000	5.449	1.844
32.52	18.502	.6296	1.028	2.130	1.880	1.00000	5.502	1.855
32.33	18.727	.6278	1.075	2.140	1.902	1.00000	5.556	1.866
32.13	18.951	.6260	1.121	2.153	1.914	1.00000	5.611	1.876
31.94	19.174	.6243	1.168	2.164	1.926	1.00000	5.666	1.886
31.76	19.618	.6226	1.263	1.185	1.951	1.00000	5.722	1.899
31.59	19.838	.6210	1.310	1.196	1.964	1.00000	5.776	1.911
31.39	20.058	.6193	1.358	2.015	1.976	1.00000	5.831	1.921
31.21	20.277	.6177	1.406	2.016	1.989	1.00000	5.887	1.922
31.03	20.495	.6161	1.455	2.026	2.001	1.00000	5.944	1.933
30.85	20.713	.6145	1.503	2.036	2.012	1.00000	6.000	1.945
30.68	20.942	.6129	1.551	2.046	2.023	1.00000	6.057	1.956
30.51	21.145	.6114	1.601	2.056	2.037	1.00000	6.114	1.967
30.33	21.360	.6099	1.651	2.066	2.052	1.00000	6.171	1.978
30.17	21.574	.6084	1.700	2.076	2.065	1.00000	6.229	1.999

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	s/s <sub>t</sub>	q/P <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/V <sup>*</sup>
2.00	.1202	.2806	.4286	.6547	.4008	.6531	.7559	1.511866
2.01	.1195	.2782	.4267	.6528	.3994	.6489	.7575	1.511805
2.02	.1190	.2755	.4247	.6497	.3974	.6407	.7597	1.511824
2.03	.1182	.2711	.4193	.6491	.3956	.6405	.7607	1.511824
2.04	.1173	.2675	.4189	.6473	.3939	.6364	.7683	1.511824
2.05	.1170	.2668	.4165	.6454	.3921	.6283	.7639	1.511824
2.06	.1164	.2665	.4142	.6436	.3904	.6282	.7654	1.511808
2.07	.1160	.2643	.4118	.6417	.3886	.6241	.7669	1.511838
2.08	.1073	.2620	.4095	.6399	.3868	.6200	.7685	1.511869
2.09	.1058	.2598	.4072	.6381	.3851	.6160	.7700	1.511899
2.10	.1043	.2576	.4049	.6363	.3833	.6119	.7715	1.511897
2.11	.1028	.2554	.4026	.6345	.3815	.6079	.7729	1.511881
2.12	.1014	.2533	.4003	.6327	.3797	.6039	.7744	1.511881
2.13	.9996	.2511	.3980	.6309	.3779	.5999	.7759	1.511782
2.14	.9856	.2490	.3958	.6291	.3761	.5960	.7773	1.511782
2.15	.9718	.2469	.3936	.6274	.3743	.5921	.7787	1.511747
2.16	.9582	.2448	.3914	.6256	.3725	.5881	.7802	1.511747
2.17	.9447	.2427	.3892	.6237	.3707	.5842	.7816	1.511747
2.18	.9312	.2407	.3870	.6218	.3689	.5804	.7830	1.511747
2.19	.9186	.2387	.3848	.6203	.3671	.5768	.7843	1.511747
2.20	.9058	.2367	.3827	.6186	.3653	.5727	.7857	1.511743
2.21	.8931	.2347	.3805	.6169	.3635	.5689	.7871	1.517415
2.22	.8807	.2328	.3784	.6151	.3617	.5651	.7884	1.517685
2.23	.8685	.2309	.3763	.6134	.3599	.5613	.7898	1.517953
2.24	.8565	.2290	.3742	.6117	.3581	.5585	.7912	1.518210
2.25	.8446	.2271	.3720	.6098	.3563	.5558	.7924	1.518414
2.26	.8329	.2251	.3700	.6083	.3545	.5501	.7937	1.518744
2.27	.8213	.2232	.3680	.6066	.3527	.5464	.7950	1.519001
2.28	.8100	.2214	.3659	.6049	.3509	.5427	.7963	1.519285
2.29	.7988	.2195	.3639	.6032	.3491	.5391	.7976	1.519512
2.30	.7878	.2177	.3619	.6016	.3473	.5355	.7988	1.519765
2.31	.7762	.2159	.3599	.5999	.3455	.5319	.8003	1.600155
2.32	.7647	.2141	.3579	.5986	.3437	.5283	.8015	1.600233
2.33	.7534	.2123	.3559	.5974	.3419	.5257	.8028	1.600299
2.34	.7424	.2106	.3540	.5969	.3401	.5232	.8040	1.600754
2.35	.7314	.2088	.3520	.5953	.3383	.5177	.8050	1.609996
2.36	.7205	.2071	.3501	.5947	.3365	.5142	.8068	1.612366
2.37	.7102	.2054	.3480	.5940	.3348	.5107	.8074	1.614744
2.38	.7005	.2037	.3462	.5934	.3330	.5072	.8086	1.617104
2.39	.6908	.2021	.3443	.5926	.3312	.5038	.8097	1.619495
2.40	.6863	.2004	.3425	.5918	.3294	.5004	.8105	1.62177
2.41	.6770	.1988	.3406	.5910	.3277	.4970	.8120	1.62407
2.42	.6678	.1971	.3387	.5902	.3259	.4937	.8132	1.626336
2.43	.6568	.1955	.3369	.5894	.3242	.4903	.8143	1.628633
2.44	.6498	.1939	.3351	.5888	.3224	.4870	.8154	1.630818
2.45	.6411	.1924	.3332	.5875	.3207	.4832	.8166	1.633531
2.46	.6324	.1908	.3314	.5864	.3190	.4804	.8178	1.635938
2.47	.6236	.1892	.3294	.5854	.3172	.4771	.8190	1.638348
2.48	.6155	.1877	.3279	.5846	.3154	.4739	.8209	1.641615
2.49	.6078	.1863	.3261	.5831	.3137	.4707		
2.50	.5990	.1847	.3243	.5825	.3120	.4675	.8220	1.64399
2.51	.5910	.1831	.3226	.5810	.3103	.4643	.8231	1.64611
2.52	.5831	.1817	.3208	.5804	.3086	.4612	.8241	1.64822
2.53	.5753	.1803	.3191	.5794	.3070	.4580	.8253	1.65031
2.54	.5676	.1788	.3174	.5784	.3052	.4549	.8272	1.655238
2.55	.5600	.1774	.3157	.5771	.3035	.4522	.8282	1.656448
2.56	.5526	.1760	.3140	.5664	.3018	.4488	.8293	1.658808
2.57	.5452	.1746	.3123	.5589	.3001	.4457	.8303	1.660551
2.58	.5380	.1738	.3107	.5574	.2984	.4427		
2.59	.5308	.1718	.3090	.5559	.2967	.4397	.8313	1.666250
2.60	.5238	.1704	.3074	.5544	.2951	.4367	.8322	1.666446
2.61	.5166	.1691	.3057	.5529	.2934	.4337	.8332	1.666446
2.62	.5092	.1677	.3041	.5515	.2916	.4306	.8343	1.666446
2.63	.5021	.1664	.3025	.5501	.2901	.4279	.8352	1.667031
2.64	.4957	.1651	.3009	.5486	.2885	.4250	.8361	1.672293
2.65	.4902	.1638	.2993	.5471	.2865	.4221	.8371	1.674181
2.66	.4838	.1625	.2977	.5457	.2852	.4192	.8380	1.676018
2.67	.4774	.1612	.2962	.5442	.2836	.4164	.8399	1.677788
2.68	.4712	.1599	.2946	.5428	.2820	.4136	.8399	1.67973
2.69	.4650	.1587	.2931	.5414	.2804	.4108	.8406	1.68157
2.70	.4589	.1574	.2915	.5399	.2788	.4080	.8417	1.68340
2.71	.4530	.1563	.2900	.5385	.2772	.4052	.8435	1.685708
2.72	.4471	.1550	.2885	.5371	.2756	.4028	.8444	1.688788
2.73	.4413	.1538	.2870	.5357	.2741	.3998	.8453	1.690551
2.74	.4356	.1526	.2855	.5343	.2725	.3971	.8462	1.692311
2.75	.4299	.1514	.2840	.5329	.2709	.3944	.8470	1.69405
2.76	.4244	.1502	.2825	.5316	.2694	.3917	.8479	1.695789
2.77	.4189	.1490	.2811	.5302	.2678	.3891	.8487	1.697499
2.78	.4135	.1479	.2796	.5288	.2663	.3865	.8496	1.69929
2.79	.4082	.1467	.2782	.5274	.2648	.3838	.8496	1.69929
2.80	.4029	.1456	.2768	.5261	.2632	.3813	.8504	1.70086
2.81	.3978	.1445	.2753	.5247	.2617	.3787	.8513	1.70253
2.82	.3927	.1434	.2739	.5234	.2602	.3761	.8521	1.70422
2.83	.3877	.1423	.2725	.5220	.2587	.3736	.8539	1.70586
2.84	.3827	.1412	.2710	.5207	.2572	.3711	.8556	1.70780
2.85	.3775	.1401	.2697	.5193	.2557	.3686	.8556	1.70922
2.86	.3723	.1390	.2683	.5180	.2543	.3663	.8564	1.710233
2.87	.3668	.1379	.2670	.5167	.2528	.3643	.8563	1.711233
2.88	.3616	.1366	.2656	.5154	.2513	.3612	.8570	1.712398
2.89	.3590	.1359	.2643	.5141	.2499	.3588	.8577	1.713550
2.90	.3545	.1348	.2629	.5128	.2484	.3564	.8585	1.71706
2.91	.3500	.1338	.2616	.5115	.2470	.3540	.8593	1.71861
2.92	.3456	.1328	.2603	.5102	.2456	.3517	.8601	1.72015
2.93	.3412	.1318	.2590	.5089	.2441	.3493	.8608	1.72166
2.94	.3367	.1305	.2577	.5076	.2427	.3470	.8615	1.72326
2.95	.3327	.1294	.2564	.5063	.2413	.3447	.8623	1.72470
2.96	.3286	.1284	.2551	.5050	.2399	.3424	.8631	1.726219
2.97	.3245	.1279	.2538	.5038	.2385	.3401	.8638	1.72767
2.98	.3204	.1269	.2525	.5025	.2371	.3378	.8646	1.72914
2.99	.3164	.1259	.2513	.5013	.2357	.3356	.8653	1.73060

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/\rho_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/\rho_1$	$M$
30.00	21.787	.6070	4.750	2.286	2.078	.7630	6.345	2.00
29.84	21.999	.6055	4.800	2.295	2.091	.7591	6.404	2.01
29.67	22.210	.6041	4.851	2.305	2.104	.7552	6.463	2.02
29.51	22.421	.6027	4.901	2.315	2.117	.7514	6.522	2.03
29.35	22.631	.6013	4.952	2.324	2.130	.7475	6.582	2.04
29.20	22.839	.5999	5.003	2.334	2.144	.7436	6.641	2.05
29.04	23.047	.5985	5.055	2.343	2.157	.7400	6.702	2.06
28.89	23.254	.5970	5.106	2.353	2.170	.7364	6.763	2.07
28.74	23.460	.5956	5.158	2.362	2.184	.7329	6.822	2.08
28.59	23.666	.5946	5.210	2.371	2.197	.7281	6.883	2.09
28.44	23.870	.5933	5.263	2.381	2.211	.7243	6.945	2.10
28.29	24.074	.5920	5.315	2.390	2.224	.7204	7.006	2.11
28.14	24.276	.5908	5.368	2.399	2.238	.7166	7.068	2.12
28.00	24.478	.5896	5.421	2.408	2.251	.7127	7.130	2.13
27.85	24.679	.5883	5.473	2.426	2.268	.7089	7.192	2.14
27.70	24.879	.5870	5.525	2.435	2.283	.7051	7.254	2.15
27.55	25.078	.5857	5.582	2.443	2.307	.7012	7.316	2.16
27.44	25.277	.5848	5.635	2.452	2.321	.6974	7.382	2.17
27.30	25.474	.5836	5.691	2.452	2.335	.6936	7.446	2.18
27.17	25.671	.5825	5.745	2.461	2.345	.6898	7.510	2.19
27.04	25.866	.5813	5.800	2.469	2.349	.6850	7.574	2.20
26.90	26.061	.5802	5.855	2.478	2.363	.6802	7.638	2.21
26.77	26.255	.5791	5.912	2.486	2.377	.6754	7.703	2.22
26.64	26.448	.5780	5.969	2.495	2.386	.6707	7.768	2.23
26.51	26.641	.5769	6.022	2.503	2.406	.6660	7.834	2.24
26.39	26.832	.5759	6.075	2.512	2.420	.6622	7.900	2.25
26.26	27.023	.5748	6.135	2.518	2.434	.6584	7.966	2.26
26.14	27.212	.5738	6.191	2.528	2.449	.6547	8.032	2.27
26.01	27.401	.5727	6.248	2.536	2.463	.6509	8.099	2.28
25.89	27.589	.5717	6.305	2.544	2.476	.6473	8.166	2.29
25.77	27.776	.5707	6.363	2.552	2.493	.6436	8.233	2.30
25.65	27.962	.5696	6.420	2.560	2.507	.6398	8.300	2.31
25.53	28.146	.5685	6.476	2.568	2.523	.6360	8.366	2.32
25.42	28.333	.5675	6.536	2.576	2.537	.6322	8.432	2.33
25.30	28.516	.5665	6.593	2.584	2.552	.6284	8.498	2.34
25.18	28.699	.5659	6.653	2.592	2.567	.6246	8.563	2.35
25.07	28.881	.5650	6.712	2.600	2.582	.6208	8.628	2.36
24.96	29.063	.5640	6.771	2.607	2.597	.6170	8.692	2.37
24.85	29.243	.5631	6.831	2.615	2.612	.6132	8.756	2.38
24.73	29.423	.5622	6.890	2.623	2.627	.6094	8.811	2.39
24.62	29.601	.5613	6.950	2.630	2.643	.6056	8.921	2.40
24.52	29.779	.5605	7.010	2.638	2.656	.6018	9.082	2.41
24.41	29.957	.5596	7.071	2.645	2.673	.5980	9.143	2.42
24.30	30.135	.5587	7.131	2.652	2.689	.5942	9.205	2.43
24.19	30.308	.5579	7.192	2.660	2.704	.5898	9.267	2.44
24.09	30.483	.5570	7.253	2.667	2.720	.5850	9.329	2.45
23.99	30.657	.5562	7.315	2.674	2.735	.5802	9.392	2.46
23.88	30.830	.5554	7.376	2.682	2.751	.5764	9.454	2.47
23.78	31.002	.5545	7.438	2.689	2.767	.5726	9.516	2.48
23.68	31.174	.5536	7.500	2.696	2.782	.5688	9.576	2.49
23.58	31.345	.5528	7.563	2.703	2.798	.5647	9.639	2.50
23.48	31.518	.5520	7.625	2.710	2.814	.5606	9.713	2.51
23.38	31.684	.5514	7.688	2.717	2.830	.5567	9.787	2.52
23.28	31.858	.5506	7.751	2.724	2.846	.5529	9.861	2.53
23.18	32.030	.5499	7.813	2.730	2.862	.5491	9.935	2.54
23.09	32.202	.5491	7.875	2.737	2.879	.5453	1.001	2.55
22.99	32.373	.5483	7.936	2.744	2.892	.5415	1.063	2.56
22.89	32.545	.5477	8.006	2.751	2.911	.5376	1.125	2.57
22.81	32.717	.5471	8.071	2.757	2.927	.5338	1.187	2.58
22.71	32.882	.5463	8.135	2.764	2.943	.5294	1.249	2.59
22.62	33.054	.5455	8.200	2.770	2.960	.5256	1.311	2.60
22.53	33.224	.5448	8.265	2.777	2.976	.5218	1.374	2.61
22.44	33.393	.5441	8.331	2.784	2.993	.5180	1.436	2.62
22.35	33.563	.5434	8.394	2.791	3.006	.5142	1.498	2.63
22.27	33.731	.5427	8.456	2.798	3.016	.5104	1.560	2.64
22.19	33.898	.5420	8.518	2.805	3.026	.5066	1.622	2.65
22.11	34.065	.5414	8.579	2.812	3.036	.5028	1.684	2.66
22.04	34.232	.5407	8.641	2.819	3.045	.5000	1.746	2.67
21.97	34.398	.5401	8.703	2.826	3.053	.4962	1.808	2.68
21.91	34.564	.5394	8.765	2.833	3.061	.4924	1.870	2.69
21.74	34.730	.5388	8.828	2.840	3.069	.4886	1.932	2.70
21.65	34.891	.5381	8.890	2.847	3.076	.4848	1.994	2.71
21.57	35.056	.5375	8.952	2.854	3.083	.4810	2.056	2.72
21.49	35.220	.5369	9.014	2.861	3.090	.4772	2.118	2.73
21.41	35.382	.5363	9.075	2.868	3.097	.4734	2.180	2.74
21.33	35.544	.5357	9.135	2.875	3.104	.4696	2.242	2.75
21.25	35.706	.5350	9.203	2.882	3.111	.4658	2.304	2.76
21.17	35.868	.5343	9.265	2.889	3.118	.4620	2.366	2.77
21.10	36.028	.5337	9.327	2.896	3.125	.4582	2.428	2.78
21.03	36.186	.5330	9.389	2.903	3.132	.4544	2.490	2.79
20.96	36.345	.5324	9.451	2.910	3.139	.4506	2.552	2.80
20.89	36.503	.5316	9.513	2.917	3.146	.4468	2.614	2.81
20.82	36.660	.5309	9.575	2.924	3.153	.4430	2.676	2.82
20.75	36.817	.5302	9.637	2.931	3.160	.4392	2.738	2.83
20.68	36.975	.5295	9.700	2.938	3.167	.4354	2.800	2.84
20.62	37.133	.5288	9.762	2.945	3.174	.4316	2.862	2.85
20.55	37.276	.5281	9.825	2.952	3.181	.4278	2.924	2.86
20.49	37.419	.5274	9.887	2.959	3.188	.4240	2.986	2.87
20.42	37.560	.5267	9.950	2.966	3.195	.4192	3.048	2.88
20.35	37.702	.5260	10.012	2.973	3.202	.4154	3.110	2.89
20.29	37.842	.5253	10.041	2.980	3.209	.4116	3.172	2.90
20.23	37.982	.5257	10.080	2.987	3.216	.4078	3.234	2.91
20.17	38.121	.5250	10.119	2.994	3.223	.4040	3.296	2.92
20.11	38.259	.5243	10.157	3.001	3.230	.3992	3.358	2.93
20.05	38.397	.5237	10.195	3.008	3.237	.3954	3.420	2.94
19.99	38.534	.5230	10.233	3.015	3.244	.3916	3.482	2.95
19.93	38.671	.5223	10.271	3.022	3.251	.3878	3.544	2.96
19.88	38.807	.5227	10.309	3.029	3.258	.3840	3.606	2.97

TABLE I. - VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	Q/P <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/a <sup>*</sup>
3.00	.3125-1	.1250	.2500	.5000	.2344	.333	.6660	1.73808
3.01	.3086-1	.1241	.2488	.4988	.2330	.311	.6667	1.73349
3.02	.3048-1	.1231	.2475	.4975	.2317	.2889	.6675	1.73498
3.03	.2997-1	.1213	.2453	.4953	.2303	.2867	.6682	1.73633
3.04	.2936-1	.1204	.2439	.4950	.2290	.2846	.6689	1.73774
3.05	.2890-1	.1195	.2426	.4958	.2276	.2824	.6696	1.73912
3.06	.2856-1	.1186	.2415	.4966	.2263	.2803	.6703	1.74059
3.07	.2820-1	.1176	.2403	.4963	.2250	.2782	.6710	1.74189
3.08	.2785-1	.1169	.2391	.4963	.2237	.2762	.6716	1.74386
3.09	.2750-1	.1169	.2391	.4960	.2224	.2741	.6723	1.74461
3.10	.2716-1	.1160	.2379	.4878	.2211	.2719	.6730	1.74596
3.11	.2694-1	.1158	.2356	.4866	.2198	.2699	.6736	1.74789
3.12	.2662-1	.1143	.2334	.4854	.2175	.2678	.6743	1.74862
3.13	.2629-1	.1128	.2312	.4842	.2152	.2656	.6750	1.74984
3.14	.2599-1	.1109	.2290	.4830	.2129	.2635	.6757	1.75084
3.15	.2565-1	.1103	.2269	.4807	.2106	.2618	.6763	1.75184
3.16	.2530-1	.1094	.2248	.4798	.2083	.2599	.6769	1.75282
3.17	.2504-1	.1084	.2227	.4783	.2060	.2579	.6776	1.75381
3.18	.2474-1	.1086	.2207	.4772	.2037	.2559	.6782	1.75637
3.19	.2444-1	.1079	.2186	.4760	.2014	.2539	.6788	1.75763
3.20	.2415-1	.1073	.2165	.4755	.1991	.2519	.6794	1.75886
3.21	.2386-1	.1064	.2143	.4737	.1969	.2498	.6807	1.76135
3.22	.2359-1	.1055	.2123	.4726	.1947	.2478	.6813	1.76259
3.23	.2332-1	.1048	.2093	.4714	.1925	.2457	.6819	1.76379
3.24	.2301-1	.1040	.2071	.4703	.1904	.2437	.6825	1.76500
3.25	.2274-1	.1033	.2051	.4692	.1884	.2416	.6831	1.76619
3.26	.2247-1	.1026	.2031	.4681	.1864	.2396	.6837	1.76738
3.27	.2220-1	.1018	.2010	.4670	.1844	.2376	.6843	1.76856
3.28	.2194-1	.1011	.1970	.4658	.1824	.2356	.6849	1.76973
3.29	.2168-1	.1004	.1910	.4647	.1804	.2337	.6854	1.77090
3.30	.2142-1	.9966-1	.1950	.4636	.1785	.2319	.6860	1.77205
3.31	.2117-1	.9892-1	.1930	.4625	.1766	.2298	.6866	1.77320
3.32	.2092-1	.9821-1	.1910	.4614	.1747	.2278	.6872	1.77434
3.33	.2068-1	.9756-1	.1890	.4604	.1728	.2258	.6877	1.77547
3.34	.2043-1	.9689-1	.1870	.4593	.1711	.2238	.6883	1.77667
3.35	.2020-1	.9623-1	.1850	.4582	.1692	.2218	.6889	1.77780
3.36	.1996-1	.9556-1	.1830	.4570	.1673	.2198	.6894	1.77885
3.37	.1973-2	.9488-1	.1810	.4559	.1654	.2178	.6900	1.77991
3.38	.1950-1	.9419-1	.1790	.4550	.1637	.2159	.6905	1.78100
3.39	.1927-1	.9353-1	.1760	.4539	.1617	.2139	.6910	1.78208
3.40	.1905-1	.9288-1	.1730	.4529	.1598	.2119	.6916	1.78316
3.41	.1883-1	.9223-1	.1700	.4518	.1579	.2099	.6921	1.78423
3.42	.1860-1	.9159-1	.1670	.4507	.1560	.2079	.6926	1.78532
3.43	.1839-1	.9093-1	.1640	.4497	.1541	.2059	.6931	1.78647
3.44	.1816-1	.9030-1	.1610	.4487	.1522	.2039	.6937	1.78759
3.45	.1793-1	.9970-1	.1580	.4476	.1503	.2019	.6942	1.78843
3.46	.1770-1	.9904-1	.1550	.4466	.1484	.1999	.6947	1.78946
3.47	.1747-1	.9840-1	.1520	.4456	.1465	.1979	.6952	1.79049
3.48	.1725-1	.9784-1	.1490	.4446	.1446	.1959	.6956	1.79151
3.49	.1703-1	.9736-1	.1460	.4436	.1427	.1939	.	.
3.50	.1676-1	.9678-1	.1430	.4425	.1408	.1919	.6963	1.79258
3.51	.1652-1	.9626-1	.1400	.4415	.1390	.1899	.6973	1.79358
3.52	.1630-1	.9574-1	.1370	.4405	.1371	.1879	.6978	1.79458
3.53	.1609-1	.9523-1	.1340	.4395	.1352	.1859	.6982	1.79549
3.54	.1590-1	.9471-1	.1310	.4385	.1333	.1839	.6987	1.79647
3.55	.1571-1	.9421-1	.1280	.4375	.1314	.1819	.6992	1.79744
3.56	.1553-1	.9374-1	.1250	.4365	.1295	.1799	.6997	1.79940
3.57	.1535-1	.9317-1	.1220	.4355	.1276	.1779	.7002	1.80036
3.58	.1517-1	.9262-1	.1190	.4345	.1257	.1759	.7007	1.80131
3.59	.1498-1	.9203-1	.1160	.4335	.1238	.1739	.	.
3.60	.1481-1	.9150-1	.1130	.4326	.1219	.1719	.7011	1.80235
3.61	.1465-1	.9095-1	.1100	.4316	.1200	.1699	.7016	1.80319
3.62	.1449-1	.9040-1	.1070	.4306	.1181	.1679	.7021	1.80412
3.63	.1434-1	.9081-1	.1040	.4296	.1162	.1659	.7025	1.80505
3.64	.1418-1	.9023-1	.1010	.4287	.1143	.1639	.7030	1.80597
3.65	.1403-1	.9965-1	.980	.4278	.1124	.1619	.7034	1.80689
3.66	.1387-1	.9807-1	.950	.4268	.1105	.1599	.7039	1.80777
3.67	.1371-1	.9751-1	.920	.4258	.1086	.1579	.7044	1.80868
3.68	.1355-1	.9695-1	.890	.4248	.1067	.1559	.7048	1.80955
3.69	.1340-1	.9640-1	.860	.4238	.1048	.1539	.7052	1.81047
3.70	.1324-1	.9584-1	.830	.4228	.1029	.1519	.	.
3.71	.1309-1	.9528-1	.800	.4218	.1010	.1499	.7057	1.81136
3.72	.1295-1	.9471-1	.770	.4208	.991	.1479	.7061	1.81233
3.73	.1281-1	.9415-1	.740	.4198	.972	.1459	.7066	1.81327
3.74	.1267-1	.9359-1	.710	.4188	.953	.1439	.7070	1.81430
3.75	.1253-1	.9303-1	.680	.4178	.934	.1419	.7074	1.81533
3.76	.1240-1	.9257-1	.650	.4168	.915	.1399	.7078	1.81628
3.77	.1226-1	.9211-1	.620	.4158	.896	.1379	.7083	1.81724
3.78	.1212-1	.9165-1	.590	.4148	.877	.1359	.7087	1.81819
3.79	.1200-1	.9120-1	.560	.4138	.858	.1339	.7091	1.81904
3.80	.1187-1	.9074-1	.530	.4128	.839	.1319	.	.
3.81	.1174-1	.9030-1	.500	.4118	.820	.1299	.7095	1.82004
3.82	.1161-1	.9084-1	.470	.4108	.801	.1279	.7100	1.82105
3.83	.1148-1	.9048-1	.440	.4098	.782	.1259	.7105	1.82203
3.84	.1135-1	.9012-1	.410	.4088	.763	.1239	.7110	1.82302
3.85	.1122-1	.9076-1	.380	.4078	.744	.1219	.7115	1.82401
3.86	.1110-1	.9041-1	.350	.4068	.725	.1199	.7120	1.82499
3.87	.1100-1	.9005-1	.320	.4058	.706	.1179	.7125	1.82597
3.88	.1088-1	.9069-1	.290	.4048	.687	.1159	.7130	1.82695
3.89	.1075-1	.9033-1	.260	.4038	.668	.1139	.7135	1.82707
3.90	.1062-1	.9007-1	.230	.4028	.649	.1119	.	.
3.91	.1049-1	.9044-1	.200	.4018	.630	.1099	.7140	1.82806
3.92	.1037-1	.9018-1	.170	.4008	.611	.1079	.7145	1.82905
3.93	.1024-1	.9092-1	.140	.3998	.592	.1059	.7150	1.83038
3.94	.1011-1	.9066-1	.110	.3988	.573	.1039	.7155	1.83140
3.95	.1000-1	.9041-1	.80	.3978	.554	.1019	.7160	1.83247
3.96	.988-1	.9015-1	.50	.3968	.535	.999	.7175	1.83359
3.97	.976-1	.9039-1	.20	.3958	.516	.980	.7180	1.83466
3.98	.966-1	.9013-1	.00	.3948	.497	.961	.7185	1.83573
3.99	.954-1	.9001-1	-	.	-	.942	.7190	1.83687

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$R_{t,2}/R_{t,1}$	$R_{t,2}/P_1$	$M$
19.47	38.942	.5222	11.00	3.000	3.667	.4273	13.67	3.00
19.40	38.077	.5218	11.08	3.010	3.686	.4247	13.76	3.01
19.34	38.211	.5213	11.15	3.020	3.705	.4221	13.85	3.02
19.27	38.345	.5208	11.23	3.030	3.724	.4196	13.94	3.03
19.20	38.478	.5204	11.30	3.040	3.743	.4171	14.03	3.04
19.04	38.612	.5199	11.38	3.050	3.762	.4145	14.12	3.05
19.07	38.746	.5195	11.45	3.060	3.781	.4120	14.21	3.06
19.01	38.873	.5190	11.53	3.070	3.800	.4095	14.30	3.07
18.95	38.003	.5186	11.61	3.084	3.819	.4071	14.39	3.08
18.88	40.133	.5181	11.69	3.044	3.839	.4046	14.48	3.09
18.82	40.263	.5177	11.76	3.048	3.859	.4022	14.57	3.10
18.76	40.391	.5173	11.84	3.053	3.878	.3998	14.66	3.11
18.69	40.519	.5168	11.92	3.060	3.897	.3973	14.75	3.12
18.63	40.647	.5164	11.99	3.067	3.917	.3950	14.83	3.13
18.57	40.774	.5160	12.07	3.071	3.937	.3926	14.93	3.14
18.51	40.900	.5156	12.15	3.071	3.957	.3902	15.03	3.15
18.45	41.026	.5152	12.23	3.076	3.977	.3879	15.12	3.16
18.39	41.158	.5148	12.31	3.080	3.997	.3855	15.21	3.17
18.33	41.287	.5144	12.39	3.085	4.017	.3838	15.31	3.18
18.27	41.400	.5140	12.47	3.089	4.037	.3809	15.40	3.19
18.21	41.524	.5136	12.55	3.094	4.057	.3786	15.49	3.20
18.15	41.647	.5132	12.63	3.098	4.077	.3764	15.59	3.21
18.09	41.770	.5128	12.71	3.102	4.097	.3741	15.68	3.22
18.03	41.891	.5124	12.79	3.107	4.117	.3719	15.78	3.23
17.98	42.013	.5120	12.87	3.111	4.138	.3696	15.87	3.24
17.92	42.134	.5116	12.95	3.115	4.158	.3674	15.97	3.25
17.86	42.254	.5112	13.03	3.119	4.178	.3652	16.06	3.26
17.81	42.374	.5109	13.12	3.124	4.199	.3630	16.16	3.27
17.75	42.493	.5105	13.20	3.128	4.220	.3609	16.25	3.28
17.70	42.612	.5101	13.28	3.132	4.240	.3587	16.35	3.29
17.64	42.730	.5096	13.36	3.136	4.261	.3566	16.45	3.30
17.58	42.848	.5094	13.43	3.140	4.282	.3544	16.54	3.31
17.53	42.965	.5091	13.50	3.144	4.303	.3523	16.64	3.32
17.48	43.081	.5087	13.58	3.148	4.323	.3502	16.74	3.33
17.42	43.198	.5083	13.66	3.152	4.344	.3481	16.84	3.34
17.37	43.313	.5080	13.73	3.156	4.365	.3461	16.94	3.35
17.31	43.428	.5077	13.81	3.160	4.386	.3440	17.03	3.36
17.26	43.543	.5073	13.89	3.164	4.406	.3420	17.13	3.37
17.21	43.657	.5070	13.97	3.168	4.426	.3400	17.23	3.38
17.16	43.770	.5066	14.01	3.172	4.450	.3379	17.33	3.39
17.10	43.884	.5063	14.20	3.176	4.471	.3359	17.43	4.0
17.05	43.996	.5060	14.29	3.180	4.493	.3339	17.53	4.1
16.99	44.108	.5056	14.37	3.183	4.514	.3319	17.63	4.2
16.95	44.220	.5053	14.46	3.187	4.536	.3300	17.73	4.3
16.90	44.331	.5050	14.54	3.191	4.557	.3280	17.83	4.4
16.85	44.442	.5047	14.63	3.195	4.578	.3261	17.93	4.5
16.80	44.552	.5043	14.71	3.201	4.600	.3241	18.03	4.6
16.75	44.662	.5040	14.80	3.203	4.622	.3222	18.14	4.7
16.70	44.771	.5037	14.89	3.206	4.644	.3203	18.24	4.8
16.65	44.879	.5034	14.98	3.209	4.666	.3184	18.34	4.9
16.60	44.988	.5031	15.06	3.217	4.688	.3166	18.44	5.0
16.55	45.095	.5028	15.15	3.221	4.710	.3147	18.55	5.1
16.50	45.203	.5025	15.23	3.224	4.732	.3129	18.65	5.2
16.46	45.310	.5022	15.33	3.227	4.754	.3110	18.75	5.3
16.41	45.416	.5019	15.41	3.231	4.776	.3092	18.86	5.4
16.36	45.521	.5016	15.50	3.234	4.798	.3074	18.96	5.5
16.31	45.627	.5013	15.59	3.238	4.821	.3056	19.07	5.6
16.27	45.732	.5010	15.68	3.241	4.843	.3038	19.17	5.7
16.22	45.837	.5007	15.77	3.245	4.865	.3020	19.27	5.8
16.17	45.941	.5004	15.86	3.245	4.888	.3002	19.38	5.9
16.13	46.045	.5002	15.95	3.248	4.911	.2985	19.49	6.0
16.08	46.148	.4998	16.04	3.253	4.933	.2966	19.59	6.1
16.04	46.261	.4995	16.13	3.258	4.955	.2947	19.69	6.2
15.99	46.374	.4993	16.22	3.263	4.977	.2923	19.80	6.3
15.95	46.485	.4990	16.31	3.268	4.998	.2903	19.91	6.4
15.90	46.597	.4988	16.40	3.265	5.024	.2889	20.02	6.5
15.86	46.698	.4985	16.49	3.268	5.047	.2868	20.13	6.6
15.81	46.798	.4982	16.59	3.271	5.070	.2846	20.23	6.7
15.77	46.898	.4980	16.68	3.275	5.093	.2824	20.34	6.8
15.72	46.958	.4977	16.77	3.278	5.116	.2803	20.45	6.9
15.68	47.058	.4974	16.86	3.284	5.139	.2781	20.56	7.0
15.64	47.157	.4972	16.96	3.287	5.163	.2760	20.67	7.1
15.59	47.255	.4969	17.05	3.290	5.186	.2741	20.78	7.2
15.55	47.353	.4967	17.14	3.294	5.209	.2722	20.88	7.3
15.51	47.451	.4964	17.23	3.297	5.233	.2702	20.99	7.4
15.47	47.548	.4962	17.33	3.300	5.256	.2683	21.10	7.5
15.42	47.645	.4959	17.42	3.303	5.280	.2670	21.21	7.6
15.38	47.748	.4957	17.52	3.306	5.303	.2654	21.33	7.7
15.34	47.858	.4954	17.61	3.309	5.327	.2639	21.44	7.8
15.30	47.953	.4952	17.71	3.309	5.351	.2623	21.55	7.9
15.26	48.029	.4949	17.80	3.312	5.375	.2608	21.66	8.0
15.22	48.124	.4947	17.90	3.315	5.398	.2593	21.77	8.1
15.18	48.218	.4944	17.99	3.318	5.422	.2578	21.88	8.2
15.14	48.312	.4942	18.09	3.321	5.446	.2563	21.99	8.3
15.09	48.406	.4940	18.18	3.324	5.470	.2549	22.11	8.4
15.05	48.499	.4937	18.28	3.327	5.494	.2535	22.22	8.5
15.01	48.592	.4935	18.37	3.330	5.519	.2520	22.33	8.6
14.97	48.685	.4933	18.47	3.332	5.543	.2506	22.44	8.7
14.93	48.777	.4930	18.57	3.335	5.567	.2491	22.56	8.8
14.90	48.869	.4926	18.67	3.336	5.591	.2475	22.66	8.9
14.86	48.960	.4926	18.76	3.341	5.616	.2459	22.77	9.0
14.82	49.051	.4924	18.86	3.344	5.640	.2446	22.90	9.1
14.78	49.142	.4921	18.96	3.347	5.665	.2432	23.02	9.2
14.74	49.232	.4919	19.06	3.349	5.689	.2418	23.13	9.3
14.70	49.322	.4917	19.15	3.352	5.714	.2404	23.25	9.4
14.66	49.415	.4915	19.25	3.355	5.739	.2390	23.37	9.5
14.62	49.501	.4913	19.35	3.358	5.764	.2376	23.49	9.6
14.58	49.590	.4910	19.45	3.360	5.788	.2362	23.60	9.7
14.55	49.678	.4908	19.55	3.363	5.813	.2349	23.72	9.8
14.51	49.766	.4906	19.65	3.365	5.838	.2336	23.83	9.9

TABLE I.- VALUES FOR RATIOS OF

M	D/D <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	Q/Q <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/v <sup>2</sup>
4.00	.9906 - 2	.6274 - 1	.1579	.3974	.1321	.1773	.9177	1.83533
4.01	.9803 - 2	.6274 - 1	.1579	.3965	.1314	.1758	.9180	1.83605
4.02	.9700 - 2	.6195 - 1	.1566	.3957	.1306	.1752	.9184	1.83677
4.03	.9599 - 2	.6157 - 1	.1559	.3949	.1299	.1743	.9187	1.83748
4.04	.9499 - 2	.6118 - 1	.1553	.3940	.1292	.1731	.9191	1.83819
4.05	.9401 - 2	.6080 - 1	.1546	.3932	.1285	.1721	.9194	1.83889
4.06	.9301 - 2	.6042 - 1	.1540	.3924	.1278	.1711	.9198	1.83959
4.07	.9207 - 2	.5904 - 1	.1535	.3916	.1271	.1701	.9201	1.84029
4.08	.9118 - 2	.5897 - 1	.1529	.3908	.1264	.1691	.9205	1.84098
4.09	.9018 - 2	.5890 - 1	.1521	.3900	.1257	.1681	.9208	1.84167
4.10	.8925 - 2	.5893 - 1	.1514	.3893	.1250	.1672	.9212	1.84235
4.11	.8833 - 2	.5857 - 1	.1508	.3883	.1243	.1662	.9215	1.84303
4.12	.8742 - 2	.5821 - 1	.1502	.3875	.1237	.1652	.9219	1.84370
4.13	.8653 - 2	.5785 - 1	.1496	.3867	.1230	.1643	.9222	1.84437
4.14	.8565 - 2	.5749 - 1	.1490	.3859	.1223	.1633	.9225	1.84504
4.15	.8476 - 2	.5713 - 1	.1483	.3850	.1217	.1624	.9228	1.84570
4.16	.8387 - 2	.5677 - 1	.1476	.3842	.1210	.1614	.9231	1.84636
4.17	.8300 - 2	.5641 - 1	.1471	.3834	.1203	.1605	.9235	1.84701
4.18	.8280 - 2	.5610 - 1	.1465	.3826	.1197	.1596	.9238	1.84766
4.19	.8137 - 2	.5575 - 1	.1459	.3820	.1190	.1587	.9242	1.84831
4.20	.8054 - 2	.5541 - 1	.1453	.3812	.1184	.1577	.9245	1.84995
4.21	.7977 - 2	.5508 - 1	.1446	.3805	.1178	.1568	.9248	1.85068
4.22	.7892 - 2	.5475 - 1	.1439	.3797	.1171	.1559	.9251	1.85022
4.23	.7803 - 2	.5442 - 1	.1432	.3790	.1165	.1550	.9254	1.85085
4.24	.7713 - 2	.5409 - 1	.1425	.3782	.1159	.1542	.9257	1.85147
4.25	.7624 - 2	.5376 - 1	.1418	.3774	.1152	.1533	.9260	1.85210
4.26	.7535 - 2	.5343 - 1	.1412	.3766	.1146	.1524	.9264	1.85273
4.27	.7504 - 2	.5311 - 1	.1407	.3759	.1140	.1515	.9267	1.85339
4.28	.7489 - 2	.5279 - 1	.1401	.3751	.1134	.1507	.9270	1.85404
4.29	.7355 - 2	.5247 - 1	.1408	.3744	.1128	.1498	.9273	1.85488
4.30	.7281 - 2	.5186 - 1	.1396	.3736	.1120	.1490	.9276	1.85566
4.31	.7209 - 2	.5153 - 1	.1390	.3729	.1115	.1481	.9279	1.85630
4.32	.7137 - 2	.5120 - 1	.1385	.3721	.1110	.1473	.9282	1.85695
4.33	.7067 - 2	.5087 - 1	.1379	.3714	.1104	.1465	.9285	1.85754
4.34	.6997 - 2	.5054 - 1	.1374	.3707	.1098	.1456	.9288	1.85812
4.35	.6928 - 2	.5021 - 1	.1368	.3699	.1092	.1448	.9291	1.85870
4.36	.6859 - 2	.5038 - 1	.1363	.3692	.1087	.1440	.9294	1.85938
4.37	.6779 - 2	.5005 - 1	.1358	.3685	.1081	.1432	.9296	1.85996
4.38	.6728 - 2	.4973 - 1	.1353	.3677	.1075	.1424	.9299	1.86054
4.39	.6659 - 2	.4941 - 1	.1347	.3670	.1069	.1416	.9302	1.86043
4.40	.6594 - 2	.4914 - 1	.1342	.3663	.1064	.1408	.9305	1.86100
4.41	.6552 - 2	.4886 - 1	.1336	.3656	.1058	.1400	.9308	1.86157
4.42	.6465 - 2	.4857 - 1	.1331	.3649	.1051	.1398	.9312	1.86213
4.43	.6402 - 2	.4828 - 1	.1326	.3641	.1047	.1385	.9315	1.86269
4.44	.6342 - 2	.4800 - 1	.1321	.3634	.1042	.1377	.9319	1.86328
4.45	.6278 - 2	.4770 - 1	.1316	.3627	.1036	.1369	.9323	1.86380
4.46	.6215 - 2	.4741 - 1	.1309	.3620	.1031	.1362	.9328	1.86435
4.47	.6153 - 2	.4712 - 1	.1303	.3613	.1025	.1354	.9332	1.86489
4.48	.6096 - 2	.4680 - 1	.1300	.3606	.1020	.1347	.9337	1.86544
4.49	.6039 - 2	.4649 - 1	.1295	.3599	.1015	.1339	.9340	1.86598
4.50	.5983 - 2	.4635 - 1	.1290	.3592	.1009	.1332	.9333	1.86651
4.51	.5923 - 2	.4588 - 1	.1285	.3585	.1004	.1325	.9338	1.86705
4.52	.5866 - 2	.4558 - 1	.1280	.3578	.9987	.1317	.9341	1.86758
4.53	.5803 - 2	.4528 - 1	.1275	.3571	.9935	.1310	.9345	1.86810
4.54	.5740 - 2	.4498 - 1	.1271	.3564	.9888	.1303	.9349	1.86863
4.55	.5677 - 2	.4468 - 1	.1266	.3558	.9841	.1300	.9354	1.86915
4.56	.5615 - 2	.4438 - 1	.1261	.3551	.9781	.1292	.9358	1.86967
4.57	.5553 - 2	.4408 - 1	.1256	.3544	.9731	.1282	.9363	1.87025
4.58	.5491 - 2	.4378 - 1	.1251	.3537	.9680	.1275	.9368	1.87070
4.59	.5430 - 2	.4349 - 1	.1246	.3531	.9630	.1268	.9372	1.87121
4.60	.5433 - 2	.4317 - 1	.1242	.3524	.9581	.1261	.9375	1.87171
4.61	.5386 - 2	.4287 - 1	.1237	.3517	.9534	.1254	.9381	1.87228
4.62	.5333 - 2	.4257 - 1	.1232	.3510	.9489	.1247	.9386	1.87285
4.63	.5280 - 2	.4227 - 1	.1223	.3504	.9443	.1241	.9390	1.87342
4.64	.5182 - 2	.4195 - 1	.1218	.3497	.9385	.1234	.9394	1.87420
4.65	.5118 - 2	.4165 - 1	.1214	.3491	.9339	.1227	.9397	1.87469
4.66	.5055 - 2	.4135 - 1	.1209	.3484	.9289	.1221	.9373	1.87518
4.67	.5003 - 2	.4105 - 1	.1205	.3477	.9241	.1214	.9376	1.87566
4.68	.4937 - 2	.4075 - 1	.1200	.3471	.9194	.1207	.9378	1.87615
4.69	.4999 - 2	.4155 - 1	.1190	.3464	.9147	.1201	.9381	1.87662
4.70	.4944 - 2	.4135 - 1	.1196	.3458	.9010	.1195	.9383	1.87663
4.71	.4889 - 2	.4115 - 1	.1181	.3451	.9054	.1188	.9386	1.87720
4.72	.4852 - 2	.4088 - 1	.1178	.3445	.9008	.1182	.9388	1.87777
4.73	.4807 - 2	.4066 - 1	.1178	.3439	.8968	.1176	.9390	1.87805
4.74	.4763 - 2	.4045 - 1	.1178	.3432	.8917	.1169	.9393	1.87851
4.75	.4718 - 2	.4020 - 1	.1174	.3426	.8872	.1163	.9398	1.87898
4.76	.4675 - 2	.3998 - 1	.1169	.3419	.8827	.1157	.9397	1.87944
4.77	.4634 - 2	.3976 - 1	.1165	.3413	.8782	.1151	.9400	1.87990
4.78	.4593 - 2	.3954 - 1	.1161	.3407	.8738	.1148	.9402	1.88036
4.79	.4547 - 2	.3933 - 1	.1156	.3400	.8694	.1139	.9404	1.88082
4.80	.4505 - 2	.3910 - 1	.1158	.3394	.8650	.1133	.9406	1.88127
4.81	.4462 - 2	.3889 - 1	.1148	.3388	.8606	.1127	.9410	1.88172
4.82	.4423 - 2	.3867 - 1	.1144	.3382	.8563	.1121	.9413	1.88217
4.83	.4362 - 2	.3846 - 1	.1139	.3376	.8520	.1115	.9415	1.88305
4.84	.4343 - 2	.3825 - 1	.1135	.3370	.8477	.1109	.9417	1.88393
4.85	.4303 - 2	.3804 - 1	.1131	.3363	.8435	.1103	.9420	1.88437
4.86	.4262 - 2	.3783 - 1	.1127	.3357	.8392	.1097	.9424	1.88480
4.87	.4221 - 2	.3762 - 1	.1123	.3351	.8350	.1092	.9428	1.88523
4.88	.4187 - 2	.3742 - 1	.1119	.3345	.8308	.1086	.9432	1.88566
4.89	.4149 - 2	.3722 - 1	.1115	.3339	.8267	.1080	.9436	1.88602
4.90	.4111 - 2	.3702 - 1	.1111	.3333	.8226	.1075	.9438	1.88666
4.91	.4074 - 2	.3680 - 1	.1107	.3327	.8183	.1069	.9440	1.88651
4.92	.4038 - 2	.3658 - 1	.1103	.3321	.8145	.1064	.9443	1.88693
4.93	.4005 - 2	.3636 - 1	.1100	.3315	.8104	.1058	.9445	1.88735
4.94	.3973 - 2	.3613 - 1	.1096	.3309	.8063	.1053	.9447	1.88777
4.95	.3950 - 2	.3591 - 1	.1092	.3303	.8024	.1047	.9450	1.88819
4.96	.3893 - 2	.3568 - 1	.1087	.3297	.7985	.1041	.9453	1.88860
4.97	.3860 - 2	.3546 - 1	.1083	.3291	.7945	.1036	.9456	1.88901
4.98	.3825 - 2	.3524 - 1	.1079	.3285	.7906	.1031	.9459	1.88942
4.99	.3791 - 2	.3502 - 1	.1075	.3279	.7867	.1026	.9462	1.88942

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$p_2/p_1$	$p_2/p_1$	$T_2/T_1$	$p_{t,2}/p_{t,1}$	$p_{t,2}/p_1$	$M$
14.48	49.854	.4904	19.75	3.368	5.863	.2373	23.95	4.00
14.44	49.941	.4902	19.85	3.371	5.888	.2346	24.07	4.01
14.40	50.029	.4900	19.95	3.374	5.914	.2319	24.19	4.02
14.37	50.115	.4898	20.05	3.376	5.939	.2293	24.30	4.03
14.35	50.202	.4896	20.15	3.379	5.964	.2267	24.42	4.04
14.32	50.288	.4894	20.25	3.382	5.989	.2240	24.54	4.05
14.29	50.374	.4892	20.35	3.385	6.013	.2214	24.66	4.06
14.26	50.459	.4890	20.45	3.387	6.040	.2188	24.78	4.07
14.22	50.544	.4888	20.55	3.390	6.066	.2162	24.90	4.08
14.19	50.628	.4886	20.65	3.392	6.091	.2136	25.02	4.09
14.15	50.713	.4884	20.75	3.394	6.117	.2110	25.14	4.10
14.08	50.797	.4882	20.85	3.397	6.143	.2084	25.26	4.11
14.05	50.880	.4880	20.95	3.399	6.168	.2058	25.38	4.12
14.01	50.964	.4878	21.05	4.02	6.194	.2032	25.50	4.13
13.97	51.047	.4876	21.15	4.04	6.220	.2007	25.62	4.14
13.94	51.139	.4875	21.25	4.07	6.246	.2182	25.74	4.15
13.91	51.212	.4873	21.35	4.09	6.272	.2170	25.87	4.16
13.88	51.294	.4871	21.45	4.11	6.298	.2158	25.99	4.17
13.84	51.375	.4869	21.55	4.14	6.324	.2146	26.11	4.18
13.81	51.457	.4867	21.70	4.16	6.351	.2135	26.23	4.19
13.77	51.538	.4865	21.80	4.19	6.377	.2123	26.36	4.20
13.74	51.618	.4863	21.91	4.21	6.403	.2111	26.48	4.21
13.71	51.699	.4862	22.01	4.23	6.430	.2100	26.61	4.22
13.67	51.780	.4860	22.12	4.26	6.456	.2088	26.73	4.23
13.64	51.859	.4858	22.23	4.28	6.483	.2077	26.85	4.24
13.61	51.938	.4856	22.33	4.30	6.509	.2066	26.98	4.25
13.58	52.017	.4854	22.43	4.32	6.536	.2054	27.10	4.26
13.54	52.096	.4853	22.54	4.35	6.563	.2043	27.23	4.27
13.51	52.175	.4851	22.65	4.37	6.589	.2032	27.35	4.28
13.48	52.253	.4849	22.76	4.39	6.616	.2021	27.48	4.29
13.45	52.331	.4848	22.86	4.42	6.643	.2010	27.61	4.30
13.42	52.408	.4846	22.97	4.44	6.670	.1999	27.73	4.31
13.38	52.485	.4844	23.08	4.46	6.697	.1988	27.86	4.32
13.35	52.563	.4843	23.19	4.48	6.724	.1978	27.99	4.33
13.32	52.640	.4841	23.30	4.50	6.750	.1967	28.11	4.34
13.29	52.716	.4839	23.40	4.53	6.778	.1956	28.24	4.35
13.26	52.792	.4838	23.51	4.55	6.806	.1945	28.37	4.36
13.20	52.868	.4836	23.62	4.57	6.833	.1935	28.50	4.37
13.17	52.944	.4834	23.73	4.59	6.860	.1925	28.63	4.38
13.04	53.019	.4833	23.84	4.61	6.888	.1915	28.75	4.39
13.14	53.094	.4831	23.95	4.63	6.915	.1904	28.88	4.40
13.11	53.169	.4830	24.06	4.65	6.943	.1894	29.01	4.41
13.08	53.243	.4828	24.17	4.66	6.970	.1884	29.14	4.42
13.05	53.317	.4826	24.28	4.68	6.998	.1874	29.27	4.43
13.02	53.391	.4825	24.39	4.70	7.026	.1864	29.40	4.44
12.99	53.465	.4823	24.50	4.74	7.054	.1854	29.53	4.45
12.96	53.538	.4822	24.61	4.76	7.082	.1844	29.66	4.46
12.93	53.611	.4820	24.73	4.78	7.110	.1835	29.80	4.47
12.90	53.684	.4819	24.84	4.80	7.138	.1825	29.93	4.48
12.87	53.756	.4817	24.95	4.82	7.166	.1815	30.06	4.49
12.84	53.829	.4816	25.06	4.84	7.194	.1806	30.19	4.50
12.81	53.901	.4814	25.18	4.86	7.222	.1796	30.32	4.51
12.78	53.972	.4813	25.30	4.88	7.250	.1787	30.46	4.52
12.75	54.044	.4811	25.40	4.90	7.279	.1777	30.59	4.53
12.72	54.115	.4810	25.51	4.92	7.307	.1768	30.72	4.54
12.70	54.186	.4808	25.63	4.94	7.335	.1759	30.86	4.55
12.67	54.256	.4807	25.74	4.96	7.364	.1749	30.99	4.56
12.64	54.327	.4806	25.86	4.98	7.393	.1740	31.12	4.57
12.61	54.397	.4804	25.97	5.00	7.421	.1731	31.26	4.58
12.58	54.467	.4803	26.09	5.01	7.450	.1722	31.39	4.59
12.56	54.536	.4801	26.20	5.03	7.479	.1713	31.53	4.60
12.53	54.605	.4800	26.32	5.05	7.507	.1704	31.66	4.61
12.50	54.674	.4799	26.43	5.07	7.536	.1695	31.80	4.62
12.47	54.743	.4797	26.55	5.09	7.565	.1686	31.93	4.63
12.44	54.812	.4796	26.66	5.11	7.594	.1678	32.07	4.64
12.42	54.880	.4795	26.78	5.13	7.623	.1669	32.21	4.65
12.39	54.949	.4793	26.89	5.15	7.652	.1660	32.34	4.66
12.36	55.016	.4792	26.10	5.16	7.682	.1652	32.48	4.67
12.34	55.084	.4791	26.21	5.18	7.711	.1643	32.62	4.68
12.31	55.151	.4789	26.32	5.20	7.740	.1635	32.76	4.69
12.28	55.218	.4788	27.36	5.22	7.770	.1626	32.89	4.70
12.26	55.285	.4787	27.48	5.24	7.799	.1618	33.03	4.71
12.23	55.351	.4785	27.60	5.25	8.829	.1609	33.17	4.72
12.20	55.418	.4784	27.72	5.27	8.858	.1601	33.31	4.73
12.18	55.484	.4783	27.83	5.29	8.887	.1593	33.45	4.74
12.15	55.550	.4781	27.95	5.32	8.917	.1585	33.59	4.75
12.13	55.615	.4780	28.07	5.34	8.947	.1577	33.73	4.76
12.10	55.681	.4779	28.19	5.36	8.977	.1569	33.87	4.77
12.08	55.746	.4778	28.31	5.38	9.007	.1562	34.01	4.78
12.05	55.811	.4776	28.43	5.37	9.037	.1553	34.15	4.79
12.02	55.875	.4775	28.55	5.39	9.067	.1545	34.29	4.80
11.97	55.940	.4774	28.67	5.41	9.097	.1537	34.43	4.81
11.95	55.104	.4773	28.79	5.43	9.127	.1529	34.57	4.82
11.92	56.132	.4770	28.91	5.45	9.157	.1521	34.71	4.83
11.90	56.195	.4769	29.03	5.46	9.187	.1514	34.85	4.84
11.87	56.259	.4768	29.15	5.48	9.216	.1506	35.00	4.85
11.85	56.322	.4767	29.27	5.49	9.246	.1498	35.14	4.86
11.82	56.384	.4766	29.39	5.51	9.276	.1491	35.28	4.87
11.80	56.447	.4764	29.52	5.52	9.309	.1483	35.43	4.88
11.78	56.510	.4763	29.64	5.54	9.340	.1476	35.57	4.89
11.75	56.572	.4762	29.76	5.56	9.370	.1468	35.71	4.90
11.73	56.634	.4761	29.89	5.57	9.401	.1461	35.86	4.91
11.70	56.695	.4760	30.01	5.59	9.432	.1454	36.00	4.92
11.68	56.757	.4759	30.13	5.61	9.463	.1446	36.15	4.93
11.66	56.818	.4757	30.25	5.64	9.493	.1438	36.29	4.94
11.63	56.879	.4756	30.38	5.66	9.523	.1430	36.44	4.95
11.61	56.940	.4755	30.50	5.68	9.554	.1422	36.58	4.96
11.58	57.001	.4754	30.62	5.70	9.586	.1415	36.73	4.97
11.56	57.061	.4753	30.88	5.72	9.618	.1404	36.87	4.98

TABLE I.- VALUES FOR RATIOS OF

M	$\rho/\rho_t$	$\rho/\rho_t$	$T/T_t$	$a/a_t$	$q/p_t$	$A^*/A$	$V/V_0$	$V/a^*$
5.00	.3756 -2	.3507 -1	.1071	.3273	.7626 -1	.1080	.9449	1.88908822
5.01	.3724 -2	.3488 -1	.1068	.3287	.7726 -1	.1005	.9425	1.88900331
5.02	.3693 -2	.3460 -1	.1060	.3266	.7724 -1	.1005	.9425	1.88910331
5.04	.3653 -2	.3439 -1	.1056	.3250	.7676 -1	.9997 -1	.9457	1.88911822
5.05	.3652 -2	.3435 -1	.1053	.3244	.7638 -1	.9995 -1	.9459	1.8892821
5.07	.3551 -2	.3379 -1	.1049	.3233	.7601 -1	.9895 -1	.9463	1.8892860
5.08	.3500 -2	.3361 -1	.1041	.3227	.7554 -1	.9845 -1	.9465	1.8892899
5.09	.3479 -2	.3343 -1	.1038	.3221	.7527 -1	.9745 -2	.9467	1.8893338
5.10	.3439 -2	.3326 -1	.1034	.3216	.7454 -1	.9696 -1	.9469	1.8893777
5.11	.3409 -2	.3308 -1	.1030	.3210	.7416 -1	.9647 -1	.9473	1.88941515
5.13	.3359 -2	.3291 -1	.1027	.3205	.7368 -1	.9598 -1	.9473	1.8894991
5.14	.3329 -2	.3273 -1	.1023	.3199	.7346 -1	.9550 -1	.9476	1.88958899
5.15	.3299 -2	.3256 -1	.1020	.3193	.7311 -1	.9502 -1	.9478	1.88958866
5.16	.3269 -2	.3238 -1	.1013	.3188	.7275 -1	.9454 -1	.9478	1.88958866
5.17	.3239 -2	.3220 -1	.1009	.3177	.7240 -1	.9407 -1	.9480	1.88958866
5.18	.3209 -2	.3202 -1	.1005	.3171	.7176 -1	.9319 -1	.9484	1.8896774
5.19	.3179 -2	.3182 -1	.1003	.3166	.7136 -1	.9266 -1	.9486	1.889714
5.20	.3149 -2	.3156 -1	.9987 -1	.3160	.7108 -1	.9220 -1	.9488	1.889751
5.21	.3109 -2	.3140 -1	.9953 -1	.3155	.7058 -1	.9174 -1	.9489	1.889787
5.23	.3079 -2	.3123 -1	.9918 -1	.3149	.7034 -1	.9128 -1	.9491	1.8898883
5.24	.3049 -2	.3095 -1	.9884 -1	.3144	.7000 -1	.9083 -1	.9493	1.889895
5.25	.3019 -2	.3067 -1	.9850 -1	.3138	.6967 -1	.9038 -1	.9497	1.889995
5.26	.2989 -2	.3039 -1	.9816 -1	.3133	.6934 -1	.9001 -1	.9498	1.8899966
5.27	.2969 -2	.3010 -1	.9782 -1	.3128	.6891 -1	.8948 -1	.9500	1.8900336
5.28	.2949 -2	.2984 -1	.9748 -1	.3123	.6858 -1	.8890 -1	.9502	1.8900771
5.29	.2929 -2	.2958 -1	.9716 -1	.3117	.6825 -1	.8860 -1	.9504	1.8900771
5.30	.2909 -2	.2931 -1	.9682 -1	.3112	.6803 -1	.8817 -1	.9504	1.8900771
5.31	.2889 -2	.2905 -1	.9987 -1	.3106	.6771 -1	.8773 -1	.9505	1.8901406
5.32	.2869 -2	.2877 -1	.9649 -1	.3101	.6739 -1	.8730 -1	.9507	1.8901406
5.33	.2849 -2	.2851 -1	.9584 -1	.3096	.6706 -1	.8689 -1	.9509	1.8901406
5.34	.2829 -2	.2823 -1	.9529 -1	.3091	.6675 -1	.8656 -1	.9513	1.89022433
5.35	.2809 -2	.2807 -1	.9483 -1	.3085	.6643 -1	.8608 -1	.9513	1.89022433
5.36	.2789 -2	.2773 -1	.9448 -1	.3080	.6612 -1	.8565 -1	.9514	1.89022433
5.37	.2770 -2	.2754 -1	.9413 -1	.3075	.6581 -1	.8518 -1	.9516	1.890310
5.38	.2740 -2	.2726 -1	.9389 -1	.3070	.6550 -1	.8477 -1	.9517	1.890344
5.39	.2720 -2	.2703 -1	.9360 -1	.3065	.6519 -1	.8436 -1	.9519	1.890377
5.40	.2699 -2	.2673 -1	.9343 -1	.3059	.6489 -1	.8395 -1	.9521	1.890410
5.41	.2679 -2	.2653 -1	.9320 -1	.3054	.6458 -1	.8354 -1	.9522	1.890443
5.42	.2659 -2	.2633 -1	.9287 -1	.3049	.6429 -1	.8313 -1	.9524	1.890509
5.43	.2639 -2	.2613 -1	.9256 -1	.3044	.6398 -1	.8273 -1	.9525	1.89055741
5.44	.2619 -2	.2593 -1	.9224 -1	.3039	.6368 -1	.8233 -1	.9529	1.8906306
5.45	.2599 -2	.2570 -1	.9204 -1	.3034	.6339 -1	.8193 -1	.9530	1.8906306
5.46	.2579 -2	.2549 -1	.9174 -1	.3029	.6309 -1	.8154 -1	.9532	1.8906720
5.47	.2559 -2	.2525 -1	.9143 -1	.3019	.6281 -1	.8075 -2	.9533	1.8906720
5.48	.2539 -2	.2505 -1	.9083 -1	.3014	.6253 -1	.8037 -2	.9535	1.890734
5.49	.2519 -2	.2486 -1	.9053 -1	.3009	.6191 -1	.7998 -1	.9537	1.890734
5.50	.2499 -2	.2471 -1	.9023 -1	.3004	.6164 -1	.7960 -1	.9538	1.890764
5.51	.2479 -2	.2445 -1	.8993 -1	.2999	.6136 -1	.7928 -1	.9540	1.890798
5.52	.2459 -2	.2413 -1	.8963 -1	.2994	.6107 -1	.7886 -1	.9541	1.890826
5.53	.2439 -2	.2397 -1	.8934 -1	.2989	.6079 -1	.7846 -1	.9543	1.8908557
5.54	.2419 -2	.2383 -1	.8904 -1	.2984	.6051 -1	.7809 -1	.9544	1.890888
5.55	.2399 -2	.2366 -1	.8873 -1	.2979	.6023 -1	.7772 -1	.9546	1.890919
5.56	.2379 -2	.2347 -1	.8844 -1	.2974	.5996 -1	.7735 -1	.9547	1.890949
5.57	.2359 -2	.2330 -1	.8817 -1	.2969	.5968 -1	.7698 -1	.9548	1.890970
5.58	.2339 -2	.2305 -1	.8788 -1	.2965	.5940 -1	.7662 -1	.9550	1.891004
5.59	.2319 -2	.2293 -1	.8760 -1	.2960	.5914 -1	.7625 -1	.9552	1.891040
5.60	.2299 -2	.2283 -1	.8731 -1	.2955	.5887 -1	.7589 -1	.9553	1.891070
5.61	.2279 -2	.2267 -1	.8703 -1	.2950	.5860 -1	.7553 -1	.9555	1.891099
5.62	.2259 -2	.2243 -1	.8674 -1	.2945	.5833 -1	.7518 -1	.9556	1.891129
5.63	.2239 -2	.2216 -1	.8642 -1	.2940	.5806 -1	.7483 -1	.9558	1.891158
5.64	.2219 -2	.2190 -1	.8608 -1	.2935	.5780 -1	.7447 -1	.9560	1.891188
5.65	.2199 -2	.2164 -1	.8580 -1	.2931	.5753 -1	.7410 -1	.9561	1.891218
5.66	.2179 -2	.2138 -1	.8553 -1	.2926	.5726 -1	.7378 -1	.9562	1.891246
5.67	.2159 -2	.2112 -1	.8524 -1	.2921	.5702 -1	.7343 -1	.9564	1.891275
5.68	.2139 -2	.2094 -1	.8491 -1	.2917	.5676 -1	.7309 -1	.9565	1.891303
5.69	.2119 -2	.2070 -1	.8460 -1	.2912	.5650 -1	.7275 -1	.9567	1.891332
5.70	.2097 -2	.2046 -1	.8435 -1	.2907	.5625 -1	.7244 -1	.9568	1.891360
5.71	.2077 -2	.2021 -1	.8412 -1	.2902	.5600 -1	.7214 -1	.9569	1.891389
5.72	.2057 -2	.1998 -1	.8389 -1	.2897	.5574 -1	.7174 -1	.9571	1.891445
5.73	.2037 -2	.1973 -1	.8362 -1	.2893	.5549 -1	.7140 -1	.9572	1.891473
5.74	.2017 -2	.1949 -1	.8331 -1	.2889	.5523 -1	.7107 -1	.9574	1.891501
5.75	.1996 -2	.1929 -1	.8301 -1	.2884	.5499 -1	.7074 -1	.9575	1.891528
5.76	.1976 -2	.1906 -1	.8277 -1	.2878	.5475 -1	.7041 -1	.9576	1.891555
5.77	.1956 -2	.1884 -1	.8256 -1	.2873	.5450 -1	.7009 -1	.9578	1.891583
5.78	.1936 -2	.1861 -1	.8235 -1	.2871	.5426 -1	.6977 -1	.9579	1.891610
5.79	.1916 -2	.1845 -1	.8211 -1	.2866	.5402 -1	.6949 -1	.9581	1.891638
5.80	.1901 -2	.1832 -1	.8185 -1	.2861	.5378 -1	.6914 -1	.9582	1.891637
5.81	.1890 -2	.1821 -1	.8163 -1	.2857	.5354 -1	.6881 -1	.9583	1.891664
5.82	.1879 -2	.1810 -1	.8143 -1	.2852	.5330 -1	.6849 -1	.9585	1.891691
5.83	.1868 -2	.1800 -1	.8121 -1	.2848	.5306 -1	.6818 -1	.9586	1.891718
5.84	.1858 -2	.1789 -1	.8098 -1	.2843	.5283 -1	.6787 -1	.9587	1.891745
5.85	.1844 -2	.1780 -1	.8060 -1	.2839	.5259 -1	.6756 -1	.9589	1.891771
5.86	.1830 -2	.1767 -1	.8034 -1	.2834	.5235 -1	.6725 -1	.9590	1.891797
5.87	.1815 -2	.1757 -1	.8009 -1	.2830	.5213 -1	.6694 -1	.9592	1.891824
5.88	.1801 -2	.1746 -1	.7984 -1	.2826	.5190 -1	.6664 -1	.9593	1.891850
5.89	.1787 -2	.1724 -1	.7959 -1	.2821	.5167 -1	.6633 -1	.9594	1.891876
5.90	.1773 -2	.1735 -1	.7934 -1	.2817	.5144 -1	.6603 -1	.9595	1.891902
5.91	.1760 -2	.1725 -1	.7910 -1	.2812	.5123 -1	.6573 -1	.9596	1.891927
5.92	.1746 -2	.1714 -1	.7885 -1	.2808	.5099 -1	.6544 -1	.9598	1.891953
5.93	.1732 -2	.1704 -1	.7861 -1	.2804	.5077 -1	.6514 -1	.9599	1.891979
5.94	.1719 -2	.1694 -1	.7836 -1	.2799	.5054 -1	.6485 -1	.9600	1.892004
5.95	.1706 -2	.1685 -1	.7818 -1	.2795	.5032 -1	.6455 -1	.9601	1.892029
5.96	.1685 -2	.1666 -1	.7797 -1	.2784	.5010 -1	.6423 -1	.9602	1.892044
5.97	.1667 -2	.1645 -1	.7774 -1	.2780	.4989 -1	.6392 -1	.9603	1.892079
5.98	.1654 -2	.1624 -1	.7750 -1	.2776	.4967 -1	.6369 -1	.9604	1.892104
5.99	.1654 -2	.1603 -1	.7726 -1	.2772	.4945 -1	.6340 -1	.9605	1.892129

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/\rho_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/\rho_1$	$M$
11.54	57.122	4752	31.00	3.571	6.680	-1.397	37.17	5.00
11.51	57.182	4751	31.15	3.573	6.711	-1.390	37.31	5.01
11.49	57.242	4750	31.15	3.574	6.737	-1.383	37.46	5.03
11.47	57.301	4749	31.15	3.574	6.774	-1.374	37.61	5.04
11.44	57.361	4748	31.15	3.577	6.806	-1.369	37.76	5.05
11.42	57.420	4747	31.15	3.579	6.837	-1.362	37.90	5.06
11.40	57.479	4745	31.15	3.580	6.869	-1.356	38.05	5.07
11.38	57.538	4744	31.15	3.582	6.900	-1.349	38.20	5.08
11.35	57.596	4743	32.01	3.583	6.932	-1.342	38.35	5.09
11.33	57.655	4742	32.14	3.585	6.964	-1.336	38.50	
11.31	57.713	4741	34.26	3.586	6.996	-1.329	38.65	5.10
11.29	57.771	4740	34.30	3.588	7.028	-1.323	38.80	5.11
11.28	57.829	4739	34.32	3.589	7.060	-1.316	38.95	5.12
11.26	57.884	4738	34.35	3.591	7.092	-1.310	39.10	5.13
11.24	57.944	4737	34.37	3.592	7.124	-1.303	39.25	5.14
11.23	58.001	4736	34.39	3.594	7.156	-1.297	39.40	5.15
11.20	58.058	4735	34.43	3.595	7.188	-1.291	39.55	5.16
11.17	58.115	4734	34.46	3.596	7.221	-1.284	39.71	5.17
11.15	58.171	4733	34.49	3.597	7.253	-1.278	39.86	5.18
11.13	58.228	4732	34.49	3.599	7.286	-1.272	40.01	5.19
11.11	58.284	4731	34.55	3.601	7.318	-1.266	40.16	5.20
11.09	58.340	4730	34.58	3.603	7.351	-1.260	40.32	5.21
11.07	58.396	4729	34.61	3.605	7.383	-1.254	40.47	5.22
11.04	58.452	4728	34.64	3.606	7.416	-1.248	40.62	5.23
11.02	58.507	4727	34.67	3.607	7.449	-1.242	40.78	5.24
10.98	58.562	4726	34.70	3.607	7.481	-1.236	40.93	5.25
10.96	58.618	4725	34.73	3.607	7.513	-1.230	41.08	5.26
10.94	58.674	4724	34.74	3.610	7.545	-1.224	41.24	5.27
10.92	58.727	4723	34.73	3.613	7.580	-1.218	41.39	5.28
10.90	58.782	4723	34.73	3.613	7.613	-1.212	41.55	5.29
10.88	58.836	4722	34.86	3.614	7.646	-1.206	41.71	5.30
10.85	58.890	4721	35.00	3.615	7.680	-1.200	41.86	5.31
10.83	58.944	4720	35.13	3.617	7.713	-1.195	41.99	5.32
10.81	58.998	4719	35.26	3.618	7.746	-1.189	42.17	5.33
10.79	59.052	4718	35.39	3.619	7.780	-1.183	42.33	5.34
10.77	59.106	4717	35.52	3.621	7.813	-1.178	42.49	5.35
10.75	59.159	4716	35.66	3.622	7.846	-1.172	42.64	5.36
10.73	59.212	4715	35.80	3.623	7.880	-1.167	42.80	5.37
10.71	59.266	4715	35.93	3.624	7.914	-1.161	42.96	5.38
10.69	59.318	4714	36.07	3.626	7.947	-1.156	43.13	5.39
10.67	59.370	4713	36.20	3.627	7.981	-1.150	43.28	5.40
10.65	59.423	4712	36.33	3.628	8.015	-1.145	43.44	5.41
10.63	59.475	4711	36.47	3.629	8.049	-1.139	43.59	5.42
10.61	59.527	4710	36.61	3.631	8.083	-1.134	43.75	5.43
10.59	59.579	4709	36.74	3.632	8.112	-1.129	43.91	5.44
10.57	59.631	4708	36.88	3.633	8.145	-1.123	44.07	5.45
10.55	59.682	4708	37.01	3.634	8.178	-1.118	44.23	5.46
10.53	59.734	4707	37.15	3.635	8.210	-1.113	44.39	5.47
10.51	59.785	4706	37.29	3.637	8.242	-1.108	44.55	5.48
10.49	59.836	4705	37.43	3.638	8.275	-1.103	44.72	5.49
10.48	59.887	4704	37.56	3.639	8.309	-1.097	44.88	5.50
10.46	59.938	4703	37.70	3.640	8.343	-1.092	45.04	5.51
10.44	59.985	4703	37.84	3.641	8.376	-1.087	45.20	5.52
10.42	60.039	4703	37.98	3.642	8.410	-1.082	45.36	5.53
10.40	60.089	4701	38.11	3.644	8.444	-1.077	45.53	5.54
10.38	60.139	4700	38.25	3.645	8.478	-1.072	45.69	5.55
10.36	60.189	4699	38.39	3.646	8.512	-1.067	45.85	5.56
10.34	60.239	4699	38.53	3.647	8.546	-1.062	46.02	5.57
10.32	60.288	4696	38.67	3.648	8.580	-1.057	46.19	5.58
10.31	60.338	4697	38.81	3.650	8.613	-1.052	46.34	5.59
10.29	60.387	4696	38.95	3.651	8.647	-1.048	46.51	5.60
10.27	60.436	4695	39.09	3.652	8.680	-1.043	46.67	5.61
10.25	60.483	4695	39.23	3.653	8.714	-1.038	46.83	5.62
10.21	60.534	4694	39.37	3.654	8.747	-1.033	47.00	5.63
10.19	60.583	4693	39.51	3.655	8.781	-1.029	47.17	5.64
10.18	60.631	4692	39.65	3.656	8.814	-1.024	47.33	5.65
10.16	60.680	4692	39.79	3.657	8.848	-1.019	47.50	5.66
10.14	60.728	4691	39.94	3.659	8.882	-1.014	47.67	5.67
10.12	60.776	4690	40.08	3.660	8.915	-1.010	47.83	5.68
10.10	60.824	4689	40.22	3.661	8.949	-1.005	48.00	5.69
10.09	60.872	4689	40.36	3.662	9.082	-1.001	48.17	5.70
10.07	60.919	4688	40.51	3.663	9.116	-9.961	48.34	5.71
10.05	60.967	4687	40.65	3.664	9.149	-9.916	48.50	5.72
10.04	61.014	4686	40.79	3.665	9.183	-9.871	48.67	5.73
10.02	61.061	4686	40.93	3.666	9.217	-9.827	48.84	5.74
9.998	61.108	4685	41.08	3.667	9.250	-9.788	49.01	5.75
9.963	61.202	4684	41.22	3.668	9.283	-9.736	49.18	5.76
9.946	61.248	4683	41.37	3.669	9.317	-9.694	49.35	5.77
9.928	61.295	4682	41.51	3.670	9.351	-9.650	49.52	5.78
9.758	61.341	4681	41.60	3.672	9.385	-9.554	49.86	5.80
9.744	61.387	4681	41.95	3.674	9.422	-9.521	50.03	5.81
9.725	61.433	4680	42.09	3.675	9.459	-9.478	50.20	5.82
9.660	61.479	4679	42.24	3.676	9.496	-9.436	50.37	5.83
9.642	61.525	4678	42.38	3.677	9.533	-9.394	50.54	5.84
9.626	61.570	4678	42.53	3.678	9.560	-9.352	50.71	5.85
9.609	61.616	4677	42.67	3.679	9.597	-9.310	50.88	5.86
9.592	61.661	4676	42.82	3.680	9.634	-9.268	51.05	5.87
9.575	61.706	4676	42.97	3.681	9.671	-9.226	51.23	5.88
9.555	61.751	4675	43.12	3.682	9.707	-9.187	51.40	5.89
9.758	61.796	4674	43.26	3.683	9.735	-9.146	51.58	5.90
9.742	61.841	4674	43.41	3.684	9.770	-9.105	51.75	5.91
9.725	61.885	4673	43.56	3.685	9.806	-9.065	51.92	5.92
9.708	61.930	4672	43.71	3.686	9.842	-9.025	52.09	5.93
9.692	61.974	4672	43.85	3.687	9.879	-8.984	52.26	5.94
9.675	62.018	4671	44.00	3.688	9.917	-8.946	52.43	5.95
9.659	62.062	4670	44.15	3.689	9.954	-8.896	52.62	5.96
9.643	62.106	4669	44.30	3.690	9.991	-8.856	52.80	5.97
9.626	62.150	4668	44.45	3.691	9.991	-8.818	52.97	5.98
9.610	62.194	4668	44.60	3.691	9.991	-8.789	53.15	5.99

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/P <sub>t</sub>	A°/A	V/V <sub>0</sub>	V/a°
6.00	.1641-2	.2133-1	.7698-1	.2774	.4923-1	.6312-1	.9608	1.92154
6.01	.1629-2	.2124-1	.7669-1	.2769	.4902-1	.6253-1	.9609	1.92178
6.02	.1616-2	.2114-1	.7645-1	.2765	.4881-1	.6205-1	.9610	1.92203
6.03	.1604-2	.2105-1	.7622-1	.2761	.4860-1	.6157-1	.9611	1.92227
6.04	.1592-2	.2095-1	.7598-1	.2757	.4839-1	.6109-1	.9613	1.92251
6.05	.1580-2	.2085-1	.7575-1	.2753	.4818-1	.6061-1	.9614	1.92275
6.06	.1567-2	.2075-1	.7552-1	.2749	.4797-1	.6013-1	.9615	1.92300
6.07	.1556-2	.2065-1	.7530-1	.2744	.4776-1	.5965-1	.9616	1.92323
6.08	.1544-2	.2055-1	.7506-1	.2740	.4755-1	.5909-1	.9617	1.92347
6.09	.1532-2	.2045-1	.7484-1	.2736	.4735-1	.5863-1	.9619	1.92371
6.10	.1520-2	.2035-1	.7461-1	.2731	.4715-1	.5806-1	.9620	1.92395
6.11	.1509-2	.2025-1	.7438-1	.2727	.4694-1	.5749-1	.9621	1.92418
6.12	.1497-2	.2015-1	.7415-1	.2723	.4674-1	.5692-1	.9622	1.92441
6.13	.1486-2	.2005-1	.7392-1	.2719	.4654-1	.5635-1	.9623	1.92465
6.14	.1475-2	.1995-1	.7370-1	.2715	.4634-1	.5593-1	.9624	1.92488
6.15	.1464-2	.1985-1	.7349-1	.2711	.4614-1	.5550-1	.9625	1.92511
6.16	.1453-2	.1975-1	.7327-1	.2707	.4595-1	.5517-1	.9626	1.92534
6.17	.1442-2	.1965-1	.7305-1	.2703	.4575-1	.5483-1	.9627	1.92557
6.18	.1431-2	.1955-1	.7283-1	.2699	.4556-1	.5452-1	.9628	1.92579
6.19	.1421-2	.1951-1	.7261-1	.2695	.4536-1	.5422-1	.9629	1.92608
6.20	.1410-2	.1948-1	.7239-1	.2691	.4517-1	.5377-1	.9631	1.92625
6.21	.1400-2	.1935-1	.7218-1	.2687	.4498-1	.5321-1	.9632	1.92647
6.22	.1389-2	.1930-1	.7196-1	.2683	.4479-1	.5262-1	.9633	1.92669
6.23	.1379-2	.1925-1	.7175-1	.2679	.4460-1	.5201-1	.9635	1.92692
6.24	.1369-2	.1915-1	.7153-1	.2675	.4441-1	.5157-1	.9636	1.92714
6.25	.1359-2	.1905-1	.7132-1	.2671	.4422-1	.5112-1	.9637	1.92736
6.26	.1349-2	.1895-1	.7111-1	.2667	.4404-1	.5063-1	.9638	1.92758
6.27	.1339-2	.1885-1	.7090-1	.2663	.4386-1	.5029-1	.9639	1.92780
6.28	.1329-2	.1875-1	.7069-1	.2659	.4367-1	.4985-1	.9640	1.92801
6.29	.1319-2	.1870-1	.7048-1	.2655	.4348-1	.4945-1	.9641	1.92823
6.30	.1309-2	.1863-1	.7027-1	.2651	.4330-1	.4901-1	.9642	1.92845
6.31	.1300-2	.1855-1	.7007-1	.2647	.4312-1	.4850-1	.9643	1.92866
6.32	.1290-2	.1847-1	.6986-1	.2643	.4294-1	.4804-1	.9644	1.92887
6.33	.1281-2	.1838-1	.6966-1	.2639	.4276-1	.4760-1	.9645	1.92909
6.34	.1271-2	.1830-1	.6945-1	.2635	.4258-1	.4727-1	.9646	1.92930
6.35	.1262-2	.1820-1	.6925-1	.2631	.4240-1	.4690-1	.9647	1.92952
6.36	.1253-2	.1814-1	.6905-1	.2628	.4223-1	.4650-1	.9648	1.92973
6.37	.1244-2	.1804-1	.6884-1	.2624	.4205-1	.4610-1	.9649	1.92993
6.38	.1234-2	.1795-1	.6864-1	.2620	.4187-1	.4570-1	.9650	1.93014
6.39	.1226-2	.1785-1	.6844-1	.2616	.4170-1	.4532-1	.9652	1.93034
6.40	.1217-2	.1775-1	.6824-1	.2612	.4153-1	.4500-1	.9653	1.93055
6.41	.1209-2	.1765-1	.6804-1	.2608	.4135-1	.4468-1	.9654	1.93096
6.42	.1200-2	.1755-1	.6785-1	.2604	.4118-1	.4436-1	.9655	1.93137
6.43	.1190-2	.1745-1	.6765-1	.2600	.4101-1	.4404-1	.9656	1.93157
6.44	.1180-2	.1735-1	.6746-1	.2597	.4084-1	.4370-1	.9657	1.93177
6.45	.1173-2	.1724-1	.6726-1	.2593	.4066-1	.4338-1	.9658	1.93197
6.46	.1165-2	.1717-1	.6707-1	.2590	.4053-1	.4306-1	.9659	1.93217
6.47	.1156-2	.1709-1	.6687-1	.2586	.4034-1	.4274-1	.9660	1.93237
6.48	.1148-2	.1702-1	.6668-1	.2582	.4018-1	.4242-1	.9661	1.93257
6.49	.1140-2	.1704-1	.6649-1	.2579	.4001-1	.4210-1	.9662	1.93277
6.50	.1322-2	.1707-1	.6630-1	.2575	.3985-1	.5079-1	.9663	1.93296
6.51	.1312-2	.1700-1	.6611-1	.2571	.3968-1	.5058-1	.9664	1.93316
6.52	.1316-2	.1698-1	.6592-1	.2567	.3952-1	.5037-1	.9665	1.93335
6.53	.1308-2	.1685-1	.6573-1	.2564	.3936-1	.5016-1	.9666	1.93354
6.54	.1300-2	.1678-1	.6554-1	.2560	.3920-1	.4995-1	.9667	1.93373
6.55	.1292-2	.1671-1	.6536-1	.2556	.3900-1	.4974-1	.9668	1.93392
6.56	.1284-2	.1664-1	.6517-1	.2552	.3888-1	.4953-1	.9669	1.93411
6.57	.1276-2	.1656-1	.6498-1	.2548	.3867-1	.4932-1	.9670	1.93430
6.58	.1269-2	.1647-1	.6480-1	.2544	.3847-1	.4911-1	.9671	1.93449
6.59	.1261-2	.1641-1	.6462-1	.2540	.3824-1	.4890-1	.9672	1.93459
6.60	.1054-2	.1630-1	.6443-1	.2536	.3805-1	.4871-1	.9673	1.93479
6.61	.1046-2	.1629-1	.6425-1	.2532	.3789-1	.4851-1	.9674	1.93498
6.62	.1039-2	.1618-1	.6407-1	.2528	.3773-1	.4831-1	.9675	1.93518
6.63	.1032-2	.1609-1	.6390-1	.2524	.3757-1	.4811-1	.9676	1.93537
6.64	.1024-2	.1599-1	.6373-1	.2520	.3742-1	.4791-1	.9677	1.93556
6.65	.1017-2	.1591-1	.6355-1	.2516	.3727-1	.4771-1	.9678	1.93575
6.66	.1010-2	.1583-1	.6335-1	.2512	.3713-1	.4752-1	.9679	1.93594
6.67	.1003-2	.1575-1	.6317-1	.2508	.3700-1	.4732-1	.9680	1.93613
6.68	.9960-1	.1567-1	.6300-1	.2504	.3687-1	.4699-1	.9681	1.93632
6.69	.9891-1	.1554-1	.6282-1	.2500	.3674-1	.4676-1	.9682	1.93651
6.70	.9882-2	.1550-1	.6264-1	.2496	.3664-1	.4654-1	.9683	1.93669
6.71	.9873-2	.1543-1	.6247-1	.2492	.3653-1	.4632-1	.9684	1.93688
6.72	.9864-2	.1535-1	.6230-1	.2488	.3643-1	.4611-1	.9685	1.93706
6.73	.9855-2	.1527-1	.6213-1	.2484	.3633-1	.4590-1	.9686	1.93724
6.74	.9846-2	.1519-1	.6195-1	.2480	.3623-1	.4570-1	.9687	1.93742
6.75	.9838-2	.1511-1	.6178-1	.2476	.3613-1	.4550-1	.9688	1.93759
6.76	.9830-2	.1503-1	.6160-1	.2472	.3603-1	.4530-1	.9689	1.93777
6.77	.9822-2	.1495-1	.6142-1	.2468	.3593-1	.4510-1	.9690	1.93794
6.78	.9814-2	.1487-1	.6124-1	.2464	.3583-1	.4490-1	.9691	1.93812
6.79	.9806-2	.1479-1	.6106-1	.2460	.3573-1	.4470-1	.9692	1.93829
6.80	.9798-2	.1471-1	.6088-1	.2456	.3563-1	.4450-1	.9693	1.93846
6.81	.9790-2	.1463-1	.6070-1	.2452	.3553-1	.4430-1	.9694	1.93863
6.82	.9782-2	.1455-1	.6052-1	.2448	.3543-1	.4410-1	.9695	1.93881
6.83	.9775-2	.1447-1	.6043-1	.2444	.3533-1	.4390-1	.9696	1.93898
6.84	.9767-2	.1439-1	.6026-1	.2440	.3523-1	.4370-1	.9697	1.93915
6.85	.9759-2	.1431-1	.6009-1	.2436	.3513-1	.4350-1	.9698	1.93932
6.86	.9751-2	.1423-1	.5992-1	.2432	.3503-1	.4330-1	.9699	1.93949
6.87	.9743-2	.1415-1	.5974-1	.2428	.3493-1	.4310-1	.9700	1.93966
6.88	.9735-2	.1407-1	.5956-1	.2424	.3483-1	.4289-1	.9701	1.93981
6.89	.9727-2	.1399-1	.5938-1	.2420	.3473-1	.4268-1	.9702	1.93997
6.90	.9719-2	.1391-1	.5920-1	.2416	.3463-1	.4247-1	.9703	1.94013
6.91	.9711-2	.1383-1	.5902-1	.2412	.3453-1	.4226-1	.9704	1.94028
6.92	.9703-2	.1375-1	.5884-1	.2408	.3443-1	.4205-1	.9705	1.94044
6.93	.9695-2	.1367-1	.5866-1	.2404	.3433-1	.4184-1	.9706	1.94060
6.94	.9687-2	.1359-1	.5848-1	.2400	.3423-1	.4163-1	.9707	1.94077
6.95	.9679-2	.1351-1	.5830-1	.2396	.3413-1	.4142-1	.9708	1.94093
6.96	.9671-2	.1343-1	.5812-1	.2392	.3403-1	.4121-1	.9709	1.94113
6.97	.9663-2	.1335-1	.5794-1	.2388	.3393-1	.4099-1	.9710	1.94129
6.98	.9655-2	.1327-1	.5776-1	.2384	.3383-1	.4078-1	.9711	1.94145
6.99	.9647-2	.1319-1	.5758-1	.2380	.3373-1	.4057-1	.9712	1.94161

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
9.594	62.277	-4.668	44.75	3.692	12.12	.8751-1	53.32	6.00
9.578	62.281	-4.667	44.90	3.693	12.16	.8771-1	53.50	6.03
9.562	62.284	-4.666	45.05	3.695	12.20	.8637-1	53.65	6.05
9.550	62.287	-4.666	45.20	3.695	12.24	.8675-1	54.03	6.08
9.541	62.410	-4.665	45.35	3.696	12.28	.8599-1	54.03	6.08
9.514	62.453	-4.665	45.50	3.697	12.31	.8562-1	54.31	6.05
9.498	62.496	-4.664	45.65	3.698	12.35	.8524-1	54.39	6.06
9.488	62.538	-4.663	45.81	3.699	12.38	.8487-1	54.56	6.07
9.467	62.581	-4.663	45.96	3.700	12.42	.8451-1	54.74	6.08
9.451	62.623	-4.662	46.11	3.701	12.46	.8414-1	54.93	6.09
9.435	62.665	-4.661	46.26	3.702	12.50	.8378-1	55.10	6.10
9.420	62.707	-4.661	46.41	3.702	12.54	.8341-1	55.46	6.12
9.389	62.749	-4.660	46.57	3.703	12.57	.8305-1	55.64	6.13
9.373	62.791	-4.660	46.72	3.704	12.61	.8270-1	55.82	6.14
9.358	62.833	-4.659	46.87	3.705	12.65	.8234-1	56.00	6.15
9.343	62.875	-4.658	47.03	3.706	12.69	.8199-1	56.15	6.16
9.327	62.916	-4.657	47.18	3.706	12.73	.8164-1	56.36	6.17
9.312	62.957	-4.657	47.34	3.706	12.77	.8128-1	56.56	6.18
9.297	62.999	-4.657	47.49	3.709	12.81	.8094-1	56.74	6.19
9.282	63.040	-4.656	47.65	3.710	12.84	.8059-1	56.72	6.20
9.267	63.122	-4.655	47.80	3.710	12.88	.8024-1	56.91	6.21
9.252	63.162	-4.654	47.96	3.711	12.92	.7990-1	57.09	6.22
9.237	63.203	-4.654	48.11	3.712	12.96	.7956-1	57.27	6.23
9.222	63.244	-4.653	48.27	3.713	13.00	.7922-1	57.45	6.24
9.207	63.284	-4.653	48.42	3.714	13.04	.7888-1	57.64	6.25
9.192	63.324	-4.653	48.58	3.715	13.08	.7855-1	57.82	6.26
9.177	63.364	-4.651	48.73	3.716	13.16	.7789-1	58.00	6.27
9.163	63.404	-4.651	48.89	3.717	13.20	.7756-1	58.19	6.28
9.148	63.444	-4.650	49.05	3.718	13.23	.7723-1	58.37	6.29
9.133	63.484	-4.650	49.36	3.719	13.27	.7690-1	58.74	6.30
9.119	63.524	-4.649	49.58	3.720	13.31	.7656-1	59.93	6.31
9.104	63.563	-4.649	49.68	3.721	13.35	.7622-1	59.93	6.32
9.090	63.603	-4.648	49.94	3.722	13.39	.7594-1	59.31	6.33
9.075	63.642	-4.647	50.15	3.723	13.43	.7562-1	59.49	6.34
9.061	63.682	-4.647	50.31	3.724	13.47	.7530-1	59.67	6.35
9.046	63.721	-4.647	50.47	3.725	13.51	.7498-1	59.86	6.36
9.032	63.760	-4.646	50.63	3.725	13.55	.7467-1	60.05	6.37
9.018	63.799	-4.645	50.79	3.726	13.59	.7436-1	60.23	6.38
9.003	63.837	-4.645	50.95	3.726	13.63	.7405-1	60.42	6.39
8.989	63.876	-4.644	50.95	3.727	13.67	.7374-1	60.61	6.40
8.975	63.923	-4.644	51.11	3.728	13.71	.7343-1	60.80	6.41
8.961	63.961	-4.643	51.43	3.729	13.75	.7312-1	60.98	6.42
8.933	64.030	-4.642	51.59	3.730	13.79	.7282-1	61.17	6.43
8.919	64.058	-4.642	51.75	3.731	13.83	.7252-1	61.36	6.44
8.905	64.106	-4.641	51.91	3.732	13.87	.7222-1	61.55	6.45
8.891	64.144	-4.641	52.08	3.733	13.91	.7192-1	61.74	6.46
8.877	64.181	-4.640	52.24	3.733	13.95	.7162-1	61.93	6.47
8.864	64.219	-4.640	52.40	3.734	14.03	.7131-1	62.12	6.48
8.850	64.257	-4.639	52.56	3.735	14.07	.7074-1	62.50	6.50
8.836	64.294	-4.639	52.73	3.736	14.11	.7045-1	62.69	6.51
8.823	64.332	-4.638	52.89	3.736	14.16	.7016-1	62.89	6.52
8.809	64.369	-4.638	53.05	3.737	14.20	.6987-1	63.08	6.53
8.795	64.406	-4.637	53.21	3.738	14.24	.6958-1	63.27	6.54
8.782	64.443	-4.637	53.38	3.739	14.28	.6929-1	63.46	6.55
8.768	64.480	-4.636	53.44	3.740	14.32	.6901-1	63.65	6.56
8.755	64.517	-4.636	53.71	3.741	14.36	.6873-1	63.85	6.57
8.741	64.554	-4.635	54.07	3.741	14.40	.6845-1	64.04	6.58
8.728	64.590	-4.635	54.04	3.742	14.44	.6817-1	64.23	6.59
8.715	64.627	-4.634	54.20	3.743	14.48	.6790-1	64.43	6.60
8.701	64.663	-4.634	54.37	3.743	14.52	.6762-1	64.62	6.61
8.688	64.700	-4.633	54.53	3.744	14.56	.6734-1	64.82	6.62
8.675	64.736	-4.633	54.60	3.744	14.61	.6707-1	65.01	6.63
8.662	64.772	-4.632	54.66	3.745	14.65	.6680-1	65.20	6.64
8.649	64.808	-4.632	54.93	3.746	14.69	.6653-1	65.40	6.65
8.636	64.844	-4.631	55.19	3.747	14.73	.6626-1	65.60	6.66
8.623	64.880	-4.631	55.36	3.747	14.77	.6599-1	65.79	6.67
8.610	64.916	-4.630	55.53	3.748	14.82	.6573-1	65.99	6.68
8.597	64.951	-4.630	55.70	3.749	14.86	.6546-1	66.18	6.69
8.584	64.987	-4.629	55.86	3.749	14.90	.6520-1	66.38	6.70
8.571	65.022	-4.629	56.03	3.750	14.94	.6494-1	66.58	6.71
8.558	65.057	-4.629	56.20	3.751	14.98	.6467-1	66.77	6.72
8.545	65.093	-4.628	56.37	3.752	15.02	.6443-1	66.97	6.73
8.532	65.128	-4.628	56.53	3.753	15.07	.6416-1	67.17	6.74
8.520	65.163	-4.627	56.70	3.753	15.11	.6390-1	67.37	6.75
8.507	65.198	-4.627	56.87	3.754	15.15	.6363-1	67.57	6.76
8.494	65.233	-4.626	57.04	3.754	15.19	.6339-1	67.77	6.77
8.482	65.268	-4.626	57.21	3.755	15.23	.6315-1	67.97	6.78
8.469	65.308	-4.625	57.38	3.756	15.28	.6289-1	68.16	6.79
8.457	65.337	-4.625	57.55	3.756	15.32	.6264-1	68.36	6.80
8.444	65.371	-4.624	57.72	3.757	15.36	.6239-1	68.56	6.81
8.432	65.406	-4.624	57.89	3.758	15.41	.6214-1	68.76	6.82
8.419	65.440	-4.624	58.06	3.758	15.45	.6189-1	68.96	6.83
8.407	65.474	-4.623	58.23	3.759	15.49	.6165-1	69.16	6.84
8.394	65.508	-4.623	58.40	3.760	15.53	.6142-1	69.37	6.85
8.382	65.542	-4.622	58.57	3.760	15.57	.6119-1	69.57	6.86
8.370	65.576	-4.622	58.75	3.761	15.60	.6092-1	69.77	6.87
8.357	65.610	-4.621	58.92	3.762	15.65	.6066-1	69.97	6.88
8.345	65.644	-4.621	59.09	3.762	15.71	.6044-1	70.17	6.89
8.333	65.677	-4.621	59.26	3.763	15.75	.6021-1	70.38	6.90
8.319	65.711	-4.620	59.44	3.764	15.79	.5997-1	70.58	6.91
8.309	65.744	-4.620	59.61	3.764	15.84	.5970-1	70.78	6.92
8.297	65.778	-4.619	59.78	3.765	15.88	.5945-1	70.99	6.93
8.285	65.814	-4.619	59.95	3.765	15.92	.5920-1	71.19	6.94
8.273	65.844	-4.618	60.13	3.766	15.96	.5897-1	71.39	6.95
8.261	65.877	-4.618	60.30	3.767	16.01	.5880-1	71.60	6.96
8.249	65.910	-4.618	60.48	3.767	16.05	.5865-1	71.80	6.97
8.237	65.943	-4.617	60.65	3.768	16.10	.5850-1	72.01	6.98
8.225	65.976	-4.617	60.83	3.769	16.14	.5818-1	72.21	6.99

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	Q/P <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/a <sup>*</sup>
7.00	.7995-3	.1580-1	.5769-1	.8402	.3264-1	.4142-1	.9707	1.94145
7.01	.7941-3	.1580-1	.5754-1	.2395	.4285-1	.4186-1	.9708	1.94161
7.02	.7888-3	.1575-1	.5738-1	.2395	.3239-1	.4109-1	.9709	1.94177
7.03	.7835-3	.1569-1	.5723-1	.2392	.3827-1	.4093-1	.9710	1.94193
7.04	.7783-3	.1564-1	.5708-1	.2389	.3814-1	.4077-1	.9710	1.94209
7.05	.7731-3	.1558-1	.5692-1	.2386	.3808-1	.4061-1	.9711	1.94224
7.06	.7679-3	.1552-1	.5677-1	.2383	.3177-1	.4051-1	.9712	1.94240
7.07	.7626-3	.1547-1	.5662-1	.2379	.3162-1	.4042-1	.9713	1.94256
7.08	.7573-3	.1542-1	.5647-1	.2376	.3153-1	.4031-1	.9714	1.94271
7.09	.7527-3	.1537-1	.5632-1	.2373	.3153-1	.3998-1	.9714	1.94287
7.10	.7474-3	.1531-1	.5617-1	.2370	.3151-1	.3982-1	.9715	1.94308
7.11	.7428-3	.1526-1	.5602-1	.2367	.3149-1	.3967-1	.9716	1.94317
7.12	.7379-3	.1521-1	.5587-1	.2364	.3147-1	.3951-1	.9717	1.94333
7.13	.7330-3	.1516-1	.5572-1	.2361	.3145-1	.3946-1	.9717	1.94348
7.14	.7284-3	.1511-1	.5557-1	.2358	.3143-1	.3940-1	.9718	1.94363
7.15	.7234-3	.1505-1	.5542-1	.2355	.3093-1	.3935-1	.9718	1.94378
7.16	.7186-3	.1500-1	.5528-1	.2352	.3086-1	.3928-1	.9719	1.94393
7.17	.7139-3	.1495-1	.5514-1	.2348	.3070-1	.3890-1	.9720	1.94408
7.18	.7092-3	.1490-1	.5499-1	.2345	.3058-1	.3875-1	.9721	1.94423
7.19	.7046-3	.1485-1	.5485-1	.2342	.3047-1	.3860-1	.9721	1.94438
7.20	.6999-3	.1479-1	.5470-1	.2339	.3024-1	.3851-1	.9723	1.94453
7.21	.6954-3	.1474-1	.5455-1	.2336	.3018-1	.3845-1	.9723	1.94467
7.22	.6909-3	.1469-1	.5440-1	.2333	.3001-1	.3839-1	.9724	1.94482
7.23	.6863-3	.1464-1	.5426-1	.2330	.2990-1	.3786-1	.9725	1.94497
7.24	.6818-3	.1459-1	.5412-1	.2327	.2978-1	.3772-1	.9726	1.94511
7.25	.6774-3	.1455-1	.5399-1	.2324	.2967-1	.3757-1	.9726	1.94526
7.26	.6730-3	.1450-1	.5385-1	.2321	.2956-1	.3743-1	.9727	1.94540
7.27	.6686-3	.1445-1	.5371-1	.2318	.2945-1	.3729-1	.9728	1.94555
7.28	.6643-3	.1440-1	.5357-1	.2315	.2934-1	.3714-1	.9728	1.94569
7.29	.6600-3	.1435-1	.5343-1	.2312	.2923-1	.3700-1	.9729	1.94583
7.30	.6557-3	.1430-1	.5330-1	.2309	.2913-1	.3686-1	.9730	1.94597
7.31	.6515-3	.1426-1	.5316-1	.2306	.2901-1	.3679-1	.9731	1.94612
7.32	.6473-3	.1421-1	.5302-1	.2303	.2890-1	.3658-1	.9731	1.94626
7.33	.6431-3	.1416-1	.5288-1	.2300	.2880-1	.3644-1	.9733	1.94640
7.34	.6390-3	.1411-1	.5275-1	.2297	.2869-1	.3630-1	.9733	1.94654
7.35	.6349-3	.1407-1	.5261-1	.2294	.2858-1	.3617-1	.9733	1.94668
7.36	.6308-3	.1403-1	.5248-1	.2291	.2848-1	.3603-1	.9734	1.94682
7.37	.6268-3	.1400-1	.5234-1	.2288	.2836-1	.3589-1	.9735	1.94696
7.38	.6228-3	.1395-1	.5220-1	.2285	.2826-1	.3576-1	.9735	1.94709
7.39	.6188-3	.1390-1	.5206-1	.2282	.2816-1	.3566-1	.9736	1.94723
7.40	.6148-3	.1384-1	.5194-1	.2279	.2806-1	.3549-1	.9737	1.94737
7.41	.6109-3	.1379-1	.5181-1	.2276	.2795-1	.3536-1	.9738	1.94750
7.42	.6070-3	.1375-1	.5167-1	.2273	.2785-1	.3528-1	.9738	1.94764
7.43	.6031-3	.1370-1	.5154-1	.2270	.2775-1	.3509-1	.9739	1.94778
7.44	.5995-3	.1366-1	.5141-1	.2267	.2765-1	.3496-1	.9740	1.94791
7.45	.5958-3	.1362-1	.5128-1	.2264	.2754-1	.3484-1	.9740	1.94816
7.46	.5921-3	.1357-1	.5115-1	.2262	.2744-1	.3470-1	.9741	1.94830
7.47	.5880-3	.1352-1	.5102-1	.2259	.2734-1	.3457-1	.9742	1.94831
7.48	.5842-3	.1348-1	.5089-1	.2256	.2724-1	.3444-1	.9742	1.94845
7.49	.5805-3	.1344-1	.5076-1	.2253	.2714-1	.3431-1	.9743	1.94858
7.50	.5769-3	.1339-1	.5063-1	.2250	.2704-1	.3418-1	.9744	1.94871
7.51	.5732-3	.1335-1	.5050-1	.2247	.2694-1	.3406-1	.9744	1.94884
7.52	.5696-3	.1332-1	.5037-1	.2244	.2683-1	.3394-1	.9745	1.94897
7.53	.5660-3	.1328-1	.5025-1	.2242	.2673-1	.3382-1	.9745	1.94900
7.54	.5625-3	.1324-1	.5012-1	.2239	.2663-1	.3370-1	.9746	1.94933
7.55	.5590-3	.1319-1	.5000-1	.2236	.2655-1	.3355-1	.9747	1.94936
7.56	.5555-3	.1314-1	.4987-1	.2233	.2646-1	.3343-1	.9747	1.94949
7.57	.5520-3	.1310-1	.4975-1	.2230	.2636-1	.3333-1	.9748	1.94968
7.58	.5485-3	.1305-1	.4962-1	.2226	.2626-1	.3318-1	.9749	1.94975
7.59	.5451-3	.1301-1	.4950-1	.2225	.2617-2	.3306-1	.9749	1.94997
7.60	.5417-3	.1297-1	.4937-1	.2222	.2607-1	.3294-1	.9750	1.95000
7.61	.5383-3	.1293-1	.4924-1	.2219	.2598-1	.3282-1	.9751	1.95025
7.62	.5350-3	.1289-1	.4913-1	.2216	.2588-1	.3270-1	.9752	1.95050
7.63	.5316-3	.1285-1	.4901-1	.2214	.2579-1	.3258-1	.9753	1.95050
7.64	.5283-3	.1281-1	.4888-1	.2211	.2570-1	.3246-1	.9753	1.95050
7.65	.5251-3	.1277-1	.4876-1	.2208	.2561-1	.3234-1	.9753	1.95050
7.66	.5218-3	.1273-1	.4864-1	.2205	.2552-1	.3220-1	.9754	1.95050
7.67	.5186-3	.1269-1	.4852-1	.2203	.2542-1	.3210-1	.9754	1.95050
7.68	.5154-3	.1265-1	.4840-1	.2200	.2532-1	.3198-1	.9755	1.95050
7.69	.5122-3	.1261-1	.4828-1	.2197	.2524-1	.3187-1	.9756	1.95051
7.70	.5090-3	.1257-1	.4816-1	.2195	.2515-1	.3175-1	.9756	1.95184
7.71	.5059-3	.1253-1	.4804-1	.2192	.2506-1	.3164-1	.9757	1.95197
7.72	.5028-3	.1249-1	.4793-1	.2189	.2497-1	.3153-1	.9757	1.95199
7.73	.4997-3	.1245-1	.4781-1	.2186	.2488-1	.3142-1	.9758	1.95216
7.74	.4966-3	.1241-1	.4769-1	.2184	.2479-1	.3130-1	.9759	1.95217
7.75	.4935-3	.1237-1	.4757-1	.2181	.2470-1	.3118-1	.9759	1.95224
7.76	.4904-3	.1234-1	.4745-1	.2178	.2461-1	.3108-1	.9760	1.95231
7.77	.4876-3	.1230-1	.4734-1	.2176	.2452-1	.3096-1	.9760	1.95239
7.78	.4846-3	.1226-1	.4728-1	.2173	.2444-1	.3086-1	.9761	1.95241
7.79	.4816-3	.1220-1	.4711-1	.2170	.2436-1	.3073-2	.9762	1.95238
7.80	.4787-3	.1219-1	.4699-1	.2168	.2427-1	.3068-1	.9762	1.95244
7.81	.4758-3	.1215-2	.4688-1	.2165	.2418-1	.3052-1	.9763	1.95256
7.82	.4728-3	.1211-1	.4676-1	.2162	.2410-1	.3040-1	.9763	1.95256
7.83	.4698-3	.1207-1	.4664-1	.2159	.2401-1	.3029-1	.9764	1.95279
7.84	.4668-3	.1204-1	.4652-1	.2156	.2392-1	.3018-1	.9764	1.95284
7.85	.4643-3	.1200-1	.4642-1	.2155	.2383-1	.3008-1	.9765	1.95286
7.86	.4615-3	.1200-1	.4631-1	.2152	.2376-1	.3000-1	.9766	1.95303
7.87	.4587-3	.1230-2	.4620-1	.2149	.2366-1	.2999-1	.9766	1.95306
7.88	.4560-3	.1204-2	.4609-1	.2147	.2359-1	.2997-1	.9767	1.95337
7.89	.4533-3	.1205-2	.4598-1	.2144	.2351-1	.2996-1	.9767	1.95348
7.90	.4505-3	.1202-2	.4586-1	.2142	.2343-1	.2995-1	.9768	1.95360
7.91	.4478-3	.1207-2	.4577-1	.2139	.2334-1	.2984-1	.9769	1.95371
7.92	.4451-3	.1202-2	.4553-1	.2134	.2325-1	.2983-1	.9770	1.95382
7.93	.4424-3	.1216-2	.4553-1	.2131	.2316-1	.2982-1	.9770	1.95393
7.94	.4398-3	.1206-2	.4549-1	.2131	.2307-1	.2981-1	.9770	1.95405
7.95	.4371-3	.1204-2	.4532-1	.2129	.2302-1	.2980-1	.9771	1.95416
7.96	.4345-3	.1201-2	.4528-1	.2126	.2294-1	.2979-1	.9771	1.95427
7.97	.4319-3	.1207-2	.4510-1	.2124	.2286-1	.2978-1	.9772	1.95438
7.98	.4289-3	.1203-2	.4498-1	.2121	.2278-1	.2978-1	.9772	1.95449
7.99	.4268-3	.1209-2	.4488-1	.2119	.2271-1	.2961-1	.9773	1.95460

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$p_2/p_1$	$p_2/p_1$	$T_2/T_1$	$p_{t,2}/p_{t,1}$	$p_{t,1}/p_1$	$M$
8.213	66.009	.4616	61.00	3.769	16.16	.5769-1	72.42	7.00
8.201	66.042	.4616	61.18	3.770	16.23	.5767-1	72.62	7.01
8.190	66.074	.4616	61.35	3.771	16.27	.5765-1	72.83	7.02
8.178	66.107	.4615	61.53	3.772	16.38	.5763-1	73.04	7.03
8.166	66.139	.4614	61.70	3.773	16.45	.5761-1	73.24	7.04
8.155	66.171	.4614	61.88	3.772	16.40	.5678-1	73.45	7.05
8.143	66.204	.4614	62.05	3.773	16.45	.5656-1	73.66	7.06
8.131	66.236	.4614	62.23	3.774	16.49	.5634-1	73.86	7.07
8.120	66.268	.4613	62.41	3.774	16.54	.5613-1	74.07	7.08
8.108	66.300	.4613	62.59	3.775	16.58	.5591-1	74.28	7.09
8.097	66.332	.4612	62.76	3.775	16.68	.5570-1	74.49	7.10
8.085	66.364	.4612	62.94	3.776	16.67	.5548-1	74.70	7.11
8.074	66.395	.4612	63.12	3.777	16.71	.5527-1	74.91	7.12
8.062	66.427	.4611	63.30	3.777	16.76	.5506-1	75.12	7.13
8.051	66.459	.4611	63.47	3.778	16.80	.5485-1	75.32	7.14
8.040	66.490	.4611	63.65	3.778	16.85	.5464-1	75.52	7.15
8.028	66.522	.4610	63.83	3.779	16.89	.5443-1	75.72	7.16
8.017	66.553	.4610	64.01	3.779	16.94	.5422-1	75.92	7.17
8.006	66.584	.4609	64.19	3.780	17.00	.5402-1	76.12	7.18
7.995	66.615	.4609	64.37	3.781	17.03	.5381-1	76.38	7.19
7.984	66.646	.4609	64.55	3.781	17.07	.5361-1	76.59	7.20
7.973	66.677	.4608	64.73	3.782	17.12	.5340-1	76.80	7.21
7.961	66.708	.4608	64.91	3.783	17.16	.5320-1	77.01	7.22
7.950	66.739	.4607	65.09	3.783	17.21	.5300-1	77.22	7.23
7.939	66.770	.4607	65.27	3.783	17.25	.5280-1	77.44	7.24
7.928	66.801	.4607	65.45	3.784	17.30	.5260-1	77.55	7.25
7.917	66.832	.4606	65.63	3.785	17.39	.5240-1	77.86	7.26
7.906	66.862	.4606	65.80	3.785	17.43	.5220-1	78.08	7.27
7.895	66.892	.4606	66.00	3.786	17.48	.5202-1	78.29	7.28
7.884	66.922	.4605	66.18	3.786	17.48	.5181-1	78.50	7.29
7.873	66.953	.4605	66.36	3.787	17.52	.5162-1	78.72	7.30
7.863	66.983	.4605	66.55	3.787	17.57	.5142-1	79.93	7.31
7.852	67.013	.4604	66.73	3.788	17.62	.5122-1	79.36	7.32
7.841	67.043	.4604	66.91	3.788	17.67	.5104-1	79.58	7.33
7.830	67.073	.4604	67.09	3.789	17.71	.5085-1	79.79	7.34
7.820	67.103	.4603	67.28	3.790	17.75	.5066-1	80.01	7.36
7.809	67.133	.4602	67.46	3.790	17.80	.5047-1	80.23	7.37
7.798	67.163	.4602	67.65	3.791	17.85	.5028-1	80.44	7.38
7.777	67.192	.4602	67.83	3.791	17.89	.5010-1	80.66	7.39
7.766	67.251	.4601	68.00	3.792	17.94	.4991-1	80.85	7.40
7.755	67.281	.4601	68.19	3.793	18.03	.4973-1	80.88	7.41
7.745	67.310	.4601	68.37	3.793	18.08	.4954-1	81.10	7.42
7.734	67.340	.4600	68.56	3.794	18.12	.4936-1	81.31	7.43
7.724	67.369	.4600	68.74	3.794	18.17	.4917-1	81.53	7.44
7.714	67.398	.4600	69.13	3.795	18.22	.4891-1	81.97	7.45
7.704	67.427	.4599	69.31	3.795	18.26	.4863-1	82.19	7.46
7.693	67.456	.4599	69.50	3.796	18.31	.4845-1	82.41	7.47
7.683	67.485	.4599	69.69	3.796	18.36	.4821-1	82.63	7.48
7.673	67.514	.4598	69.88	3.797	18.40	.4810-1	82.85	7.49
7.662	67.543	.4598	70.06	3.797	18.45	.4792-1	83.07	7.50
7.652	67.571	.4598	70.25	3.798	18.50	.4774-1	83.29	7.51
7.642	67.600	.4597	70.44	3.798	18.54	.4757-1	83.51	7.52
7.632	67.628	.4597	70.63	3.799	18.59	.4739-1	83.73	7.53
7.621	67.657	.4597	70.81	3.800	18.64	.4720-1	83.95	7.54
7.611	67.685	.4596	71.00	3.800	18.70	.4688-1	84.39	7.55
7.601	67.714	.4596	71.19	3.801	18.76	.4671-1	84.62	7.56
7.591	67.742	.4596	71.38	3.801	18.83	.4654-1	84.84	7.58
7.581	67.770	.4595	71.57	3.802	18.87	.4637-1	85.06	7.59
7.571	67.798	.4595	71.76	3.802	18.87			
7.561	67.827	.4595	71.95	3.803	18.98	.4620-1	85.26	7.60
7.551	67.855	.4594	72.14	3.803	19.02	.4602-1	85.51	7.61
7.541	67.882	.4594	72.33	3.803	19.06	.4586-1	85.73	7.62
7.531	67.910	.4594	72.51	3.804	19.11	.4570-1	85.96	7.63
7.521	67.938	.4593	72.71	3.804	19.16	.4553-1	86.18	7.64
7.511	67.964	.4593	72.90	3.805	19.21	.4537-1	86.40	7.65
7.501	67.994	.4593	73.09	3.805	19.26	.4520-1	86.63	7.66
7.491	68.021	.4593	73.29	3.806	19.30	.4504-1	86.85	7.67
7.482	68.049	.4592	73.48	3.806	19.35	.4488-1	87.08	7.68
7.472	68.076	.4592	73.67	3.807	19.35	.4472-1	87.31	7.69
7.462	68.104	.4592	73.86	3.807	19.40	.4456-1	87.53	7.70
7.452	68.131	.4591	74.06	3.808	19.45	.4440-1	87.76	7.71
7.443	68.158	.4591	74.25	3.808	19.50	.4424-1	87.98	7.72
7.433	68.185	.4591	74.44	3.809	19.54	.4408-1	88.21	7.73
7.423	68.212	.4590	74.63	3.809	19.59	.4392-1	88.44	7.74
7.414	68.239	.4590	74.83	3.810	19.64	.4377-1	88.67	7.75
7.404	68.266	.4590	75.02	3.820	19.69	.4361-1	88.90	7.76
7.394	68.293	.4590	75.23	3.820	19.74	.4345-1	89.12	7.77
7.385	68.320	.4589	75.41	3.811	19.79	.4330-1	89.35	7.78
7.375	68.347	.4589	75.61	3.812	19.84	.4315-1	89.58	7.79
7.366	68.374	.4589	75.80	3.812	19.88	.4299-1	89.81	7.80
7.356	68.400	.4588	76.00	3.812	19.93	.4284-1	90.04	7.81
7.347	68.427	.4588	76.19	3.813	19.98	.4269-1	90.27	7.82
7.338	68.454	.4588	76.39	3.813	20.03	.4254-1	90.50	7.83
7.328	68.480	.4587	76.58	3.814	20.08	.4239-1	90.73	7.84
7.319	68.507	.4587	76.78	3.814	20.13	.4224-1	90.96	7.85
7.310	68.533	.4587	76.97	3.814	20.18	.4209-1	91.19	7.86
7.300	68.559	.4587	77.17	3.815	20.23	.4194-1	91.42	7.87
7.291	68.585	.4586	77.37	3.816	20.28	.4179-1	91.65	7.88
7.281	68.612	.4586	77.57	3.816	20.34	.4164-1	91.88	7.89
7.272	68.638	.4586	77.76	3.817	20.38	.4150-1	92.11	7.90
7.263	68.664	.4585	77.96	3.817	20.42	.4135-1	92.35	7.91
7.254	68.690	.4585	78.16	3.817	20.47	.4121-1	92.56	7.92
7.244	68.717	.4585	78.36	3.818	20.52	.4106-1	92.81	7.93
7.235	68.744	.4585	78.55	3.818	20.58	.4092-1	93.04	7.94
7.226	68.767	.4584	78.75	3.819	20.62	.4078-1	93.28	7.95
7.217	68.793	.4584	78.95	3.819	20.67	.4063-1	93.51	7.96
7.208	68.819	.4584	79.15	3.820	20.72	.4049-1	93.75	7.97
7.199	68.844	.4583	79.35	3.820	20.77	.4035-1	93.98	7.98
7.190	68.870	.4583	79.55	3.820	20.82	.4021-1	94.21	7.99

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	Q/P <sub>t</sub>	A*/A	V/V <sub>0</sub>	V/v*
.000	.42142 -1	.94755 -1	.4478 -1	.2116	.2263 -1	.2851 -1	.9774	1.95471
.001	.4217 -1	.9471 -1	.4467 -1	.2114	.2255 -1	.2841 -1	.9774	1.95482
.003	.4192 -1	.9474 -1	.4456 -1	.2106	.2249 -1	.2831 -1	.9775	1.95493
.005	.4145 -1	.9340 -1	.4435 -1	.2103	.2232 -1	.2823 -1	.9776	1.95504
.008	.4129 -1	.9297 -1	.4415 -1	.2101	.2216 -1	.2816 -1	.9777	1.95515
.009	.4069 -1	.9241 -1	.4404 -1	.2098	.2209 -1	.2788 -1	.9777	1.95516
.010	.4045 -1	.9218 -1	.4393 -1	.2096	.2201 -1	.2772 -1	.9778	1.95517
.012	.4028 -1	.9174 -1	.4380 -1	.2094	.2193 -1	.2763 -1	.9778	1.95518
.015	.3998 -1	.9143 -1	.4373 -1	.2091	.2186 -1	.2753 -1	.9779	1.95519
.017	.3997 -1	.9111 -1	.4368 -1	.2089	.2178 -1	.2744 -1	.9780	1.95520
.019	.3995 -1	.9079 -1	.4363 -1	.2087	.2171 -1	.2735 -1	.9781	1.955610
.021	.3995 -1	.9057 -1	.4358 -1	.2084	.2163 -1	.2725 -1	.9781	1.955621
.024	.3988 -1	.8933 -1	.4351 -1	.2079	.2149 -1	.2706 -1	.9782	1.955631
.026	.3988 -1	.8920 -1	.4350 -1	.2076	.2141 -1	.2696 -1	.9783	1.955641
.027	.3983 -1	.8897 -1	.4347 -1	.2074	.2134 -1	.2687 -1	.9783	1.955652
.028	.3981 -1	.8885 -1	.4340 -1	.2071	.2127 -1	.2678 -1	.9783	1.955662
.029	.3979 -1	.8885 -1	.4338 -1	.2069	.2120 -1	.2668 -1	.9784	1.955672
.030	.3974 -1	.8870 -1	.4332 -1	.2067	.2112 -1	.2659 -1	.9784	1.955682
.032	.3970 -1	.8865 -1	.4327 -1	.2064	.2105 -1	.2651 -1	.9785	1.955703
.034	.3968 -1	.8862 -1	.4323 -1	.2062	.2091 -1	.2641 -1	.9785	1.955713
.035	.3968 -1	.8861 -1	.4320 -1	.2059	.2084 -1	.2638 -1	.9786	1.955723
.036	.3968 -1	.8861 -1	.4317 -1	.2057	.2077 -1	.2614 -1	.9787	1.955743
.037	.3968 -1	.8861 -1	.4314 -1	.2054	.2070 -1	.2605 -1	.9788	1.955763
.039	.3959 -1	.8854 -1	.4310 -1	.2052	.2063 -1	.2596 -1	.9788	1.955773
.040	.3957 -1	.8854 -1	.4308 -1	.2049	.2056 -1	.2587 -1	.9789	1.955773
.041	.3955 -1	.8854 -1	.4306 -1	.2046	.2049 -1	.2578 -1	.9789	1.955773
.042	.3953 -1	.8852 -1	.4303 -1	.2043	.2042 -1	.2570 -1	.9789	1.955782
.044	.3951 -1	.8849 -1	.4298 -1	.2040	.2035 -1	.2561 -1	.9790	1.955802
.045	.3949 -1	.8846 -1	.4295 -1	.2038	.2028 -1	.2558 -1	.9790	1.955812
.047	.3947 -1	.8843 -1	.4293 -1	.2035	.2021 -1	.2553 -1	.9791	1.955822
.048	.3945 -1	.8840 -1	.4290 -1	.2033	.2015 -1	.2553 -1	.9791	1.955832
.049	.3945 -1	.8837 -1	.4288 -1	.2030	.2008 -1	.2548 -1	.9792	1.955842
.050	.3945 -1	.8835 -1	.4285 -1	.2028	.2001 -1	.2540 -1	.9793	1.955852
.052	.3943 -1	.8832 -1	.4282 -1	.2025	.1995 -1	.2530 -1	.9793	1.955862
.054	.3941 -1	.8830 -1	.4279 -1	.2023	.1988 -1	.2520 -1	.9794	1.955872
.056	.3940 -1	.8827 -1	.4276 -1	.2020	.1981 -1	.2510 -1	.9794	1.955882
.058	.3938 -1	.8824 -1	.4273 -1	.2017	.1975 -1	.2484 -1	.9794	1.955892
.060	.3938 -1	.8821 -1	.4270 -1	.2015	.1968 -1	.2475 -1	.9794	1.955899
.062	.3938 -1	.8818 -1	.4267 -1	.2012	.1962 -1	.2467 -1	.9795	1.955906
.064	.3938 -1	.8815 -1	.4264 -1	.2010	.1955 -1	.2458 -1	.9795	1.955916
.066	.3938 -1	.8812 -1	.4261 -1	.2008	.1948 -1	.2449 -1	.9796	1.955926
.068	.3938 -1	.8809 -1	.4258 -1	.2006	.1941 -1	.2443 -1	.9797	1.955936
.070	.3938 -1	.8806 -1	.4255 -1	.2003	.1934 -1	.2434 -1	.9797	1.955946
.072	.3938 -1	.8803 -1	.4252 -1	.2000	.1927 -1	.2426 -1	.9798	1.955954
.074	.3938 -1	.8800 -1	.4249 -1	.1999	.1920 -1	.2418 -1	.9798	1.955964
.076	.3938 -1	.8797 -1	.4246 -1	.1996	.1917 -1	.2410 -1	.9798	1.955974
.078	.3938 -1	.8794 -1	.4243 -1	.1993	.1911 -1	.2402 -1	.9799	1.955982
.080	.3938 -1	.8791 -1	.4240 -1	.1990	.1904 -1	.2394 -1	.9799	1.955992
.082	.3938 -1	.8788 -1	.4237 -1	.1987	.1897 -1	.2386 -1	.9799	1.955998
.084	.3938 -1	.8785 -1	.4234 -1	.1984	.1890 -1	.2378 -1	.9800	1.956000
.086	.3938 -1	.8782 -1	.4231 -1	.1981	.1886 -1	.2370 -1	.9800	1.956009
.088	.3938 -1	.8779 -1	.4228 -1	.1978	.1880 -1	.2362 -1	.9801	1.956018
.090	.3938 -1	.8776 -1	.4225 -1	.1975	.1873 -1	.2354 -1	.9801	1.956027
.092	.3938 -1	.8773 -1	.4222 -1	.1972	.1867 -1	.2346 -1	.9802	1.956036
.094	.3938 -1	.8770 -1	.4219 -1	.1969	.1861 -1	.2339 -1	.9803	1.956045
.096	.3938 -1	.8767 -1	.4216 -1	.1966	.1855 -1	.2331 -1	.9803	1.956054
.098	.3938 -1	.8764 -1	.4213 -1	.1963	.1848 -1	.2323 -1	.9803	1.956063
.100	.3938 -1	.8761 -1	.4210 -1	.1960	.1841 -1	.2315 -1	.9804	1.956072
.102	.3938 -1	.8758 -1	.4207 -1	.1957	.1834 -1	.2307 -1	.9804	1.956081
.104	.3938 -1	.8755 -1	.4204 -1	.1954	.1827 -1	.2300 -1	.9805	1.956090
.106	.3938 -1	.8752 -1	.4201 -1	.1951	.1820 -1	.2292 -1	.9805	1.956107
.108	.3938 -1	.8749 -1	.4198 -1	.1948	.1813 -1	.2284 -1	.9806	1.956116
.110	.3938 -1	.8746 -1	.4195 -1	.1945	.1806 -1	.2276 -1	.9806	1.956125
.112	.3938 -1	.8743 -1	.4192 -1	.1942	.1799 -1	.2269 -1	.9807	1.956133
.114	.3938 -1	.8740 -1	.4189 -1	.1939	.1792 -1	.2261 -1	.9807	1.956142
.116	.3938 -1	.8737 -1	.4186 -1	.1936	.1785 -1	.2253 -1	.9808	1.956151
.118	.3938 -1	.8734 -1	.4183 -1	.1933	.1778 -1	.2245 -1	.9808	1.956159
.120	.3938 -1	.8731 -1	.4180 -1	.1930	.1771 -1	.2237 -1	.9808	1.956168
.122	.3938 -1	.8728 -1	.4177 -1	.1927	.1764 -1	.2229 -1	.9809	1.956176
.124	.3938 -1	.8725 -1	.4174 -1	.1924	.1757 -1	.2221 -1	.9810	1.956185
.126	.3938 -1	.8722 -1	.4171 -1	.1921	.1750 -1	.2213 -1	.9810	1.956194
.128	.3938 -1	.8719 -1	.4168 -1	.1918	.1743 -1	.2205 -1	.9810	1.956203
.130	.3938 -1	.8716 -1	.4165 -1	.1915	.1736 -1	.2197 -1	.9811	1.956212
.132	.3938 -1	.8713 -1	.4162 -1	.1912	.1729 -1	.2189 -1	.9811	1.956221
.134	.3938 -1	.8710 -1	.4159 -1	.1909	.1722 -1	.2181 -1	.9811	1.956230
.136	.3938 -1	.8707 -1	.4156 -1	.1906	.1715 -1	.2173 -1	.9811	1.956239
.138	.3938 -1	.8704 -1	.4153 -1	.1903	.1708 -1	.2165 -1	.9811	1.956248
.140	.3938 -1	.8701 -1	.4150 -1	.1900	.1701 -1	.2157 -1	.9811	1.956257
.142	.3938 -1	.8698 -1	.4147 -1	.1897	.1694 -1	.2149 -1	.9811	1.956266
.144	.3938 -1	.8695 -1	.4144 -1	.1894	.1687 -1	.2141 -1	.9811	1.956275
.146	.3938 -1	.8692 -1	.4141 -1	.1891	.1680 -1	.2133 -1	.9811	1.956284
.148	.3938 -1	.8689 -1	.4138 -1	.1888	.1673 -1	.2125 -1	.9811	1.956293
.150	.3938 -1	.8686 -1	.4135 -1	.1885	.1666 -1	.2117 -1	.9811	1.956301
.152	.3938 -1	.8683 -1	.4132 -1	.1882	.1659 -1	.2109 -1	.9811	1.956309
.154	.3938 -1	.8680 -1	.4129 -1	.1879	.1652 -1	.2091 -1	.9811	1.956317
.156	.3938 -1	.8677 -1	.4126 -1	.1876	.1645 -1	.2083 -1	.9811	1.956326
.158	.3938 -1	.8674 -1	.4123 -1	.1873	.1638 -1	.2075 -1	.9811	1.956335
.160	.3938 -1	.8671 -1	.4120 -1	.1870	.1631 -1	.2067 -1	.9811	1.956343
.162	.3938 -1	.8668 -1	.4117 -1	.1867	.1624 -1	.2059 -1	.9811	1.956352
.164	.3938 -1	.8665 -1	.4114 -1	.1864	.1617 -1	.2051 -1	.9811	1.956360
.166	.3938 -1	.8662 -1	.4111 -1	.1861	.1610 -1	.2043 -1	.9811	1.956369
.168	.3938 -1	.8659 -1	.4108 -1	.1858	.1603 -1	.2035 -1	.9811	1.956378
.170	.3938 -1	.8656 -1	.4105 -1	.1855	.1596 -1	.2027 -1	.9811	1.956387
.172	.3938 -1	.8653 -1	.4102 -1	.1852	.1589 -1	.2019 -1	.9811	1.956396
.174	.3938 -1	.8650 -1	.4099 -1	.1849	.1582 -1	.2011 -1	.9811	1.956405
.176	.3938 -1	.8647 -1	.4096 -1	.1846	.1575 -1	.2003 -1	.9811	1.956414
.178	.3938 -1	.8644 -1	.4093 -1	.1843	.1568 -1	.1995 -1	.9811	1.956423
.180	.3938 -1	.8641 -1	.4090 -1	.1840	.1561 -1	.1987 -1	.9811	1.956432
.182	.3938 -1	.8638 -1	.4087 -1	.1837	.1554 -1	.1979 -1	.9811	1.956441
.184	.3938 -1	.8635 -1	.4084 -1	.1834	.1547 -1	.1971 -1	.9811	1.956450
.186	.3938 -1	.8632 -1	.4081 -1	.1831	.1540 -1	.1963 -1	.9811	1.956459
.188	.3938 -1	.8629 -1	.4078 -1	.1828	.1533 -1	.1955 -1	.9811	1.956468
.190	.3938 -1	.8626 -1	.4075 -1	.1825	.1526 -1	.1947 -1	.9811	1.956477
.192	.3938 -1	.8623 -1	.4072 -1	.1822	.1519 -1	.1939 -1	.9811	1.956486
.194	.3938 -1	.8620 -1	.4069 -1	.1819	.1512 -1	.1931 -1	.9811	1.956495
.196	.3938 -1	.8617 -1	.4066 -1	.1816	.1505 -1	.1923 -1	.9811	1.956504
.198	.3938 -1	.8614 -1	.4063 -1	.1813	.1498 -1	.1915 -1	.9811	1.956513
.200	.3938 -1	.8611 -1	.4060 -1	.1810	.1491 -1	.1907 -1	.9811	1.956522
.202	.3938 -1	.8608 -1	.4057 -1	.1807	.1484 -1	.1899 -1	.9811	1.956531
.204	.3938 -1	.8605 -1	.4054 -1	.1804	.1477 -1	.1891 -1	.9811	1.956540
.206	.3938 -1	.8602 -1	.4051 -1	.1801	.1470 -1	.1883 -1	.9811	1.956549
.208	.3938 -1	.8599 -1	.4048 -1	.1798	.1463 -1	.1875 -1	.9811	1.956558
.210	.3938 -1	.8596 -1	.4045 -1	.1795	.1456 -1	.1867 -1	.9811	1.956567
.212	.3938 -1	.8593 -1	.4042 -1</td					

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
7.181	68.895	.4563	79.75	3.821	20.87	.4007-1	94.45	.0000
7.172	68.921	.4563	79.93	3.821	20.92	.3993-1	94.68	.0000
7.163	68.946	.4562	80.15	3.822	20.97	.3979-1	94.92	.0000
7.154	68.971	.4562	80.35	3.823	21.02	.3965-1	95.16	.0000
7.145	68.997	.4562	80.55	3.823	21.07	.3952-1	95.39	.0000
7.136	69.022	.4562	80.75	3.823	21.12	.3939-1	95.63	.0000
7.127	69.047	.4562	80.95	3.823	21.17	.3926-1	95.87	.0000
7.118	69.072	.4562	81.16	3.824	21.22	.3913-1	96.11	.0000
7.109	69.097	.4562	81.36	3.824	21.27	.3900-1	96.34	.0000
7.100	69.122	.4562	81.56	3.824	21.32	.3884-1	96.58	.0000
7.092	69.147	.4560	81.76	3.825	21.38	.3871-1	96.81	.0000
7.083	69.172	.4560	81.97	3.826	21.43	.3857-1	97.05	.0000
7.074	69.196	.4560	82.17	3.826	21.48	.3844-1	97.29	.0000
7.065	69.221	.4560	82.37	3.827	21.53	.3831-1	97.53	.0000
7.056	69.246	.4560	82.57	3.827	21.58	.3818-1	97.77	.0000
7.048	69.270	.4567	82.78	3.827	21.63	.3805-1	98.01	.0000
7.039	69.295	.4567	82.98	3.828	21.68	.3798-1	98.25	.0000
7.031	69.319	.4567	83.19	3.828	21.73	.3791-1	98.49	.0000
7.022	69.344	.4567	83.39	3.828	21.78	.3786-1	98.73	.0000
7.013	69.368	.4567	83.60	3.829	21.83	.3753-1	98.97	.0000
7.005	69.395	.4578	83.80	3.829	21.88	.3740-1	99.21	.0000
6.998	69.417	.4577	84.01	3.830	21.93	.3727-1	99.45	.0000
6.979	69.441	.4577	84.21	3.830	21.99	.3705-1	99.69	.0000
6.962	69.465	.4577	84.43	3.830	22.04	.3680-1	100.0	.0000
6.954	69.489	.4577	84.62	3.831	22.14	.3665-1	100.4	.0000
6.945	69.513	.4576	84.83	3.832	22.25	.3652-1	100.7	.0000
6.937	69.537	.4576	85.03	3.832	22.30	.3640-1	101.1	.0000
6.928	69.565	.4576	85.24	3.832	22.35	.3620-1	101.4	.0000
6.920	69.633	.4575	85.86	3.833	22.40	.3615-1	101.6	.0000
6.912	69.656	.4575	86.07	3.833	22.45	.3603-1	102.9	.0000
6.903	69.680	.4575	86.28	3.834	22.50	.3591-1	103.1	.0000
6.895	69.704	.4574	86.49	3.834	22.56	.3579-1	103.4	.0000
6.887	69.727	.4574	86.69	3.835	22.61	.3567-1	103.6	.0000
6.878	69.751	.4574	86.90	3.835	22.66	.3555-1	103.9	.0000
6.870	69.774	.4574	87.11	3.835	22.71	.3543-1	103.1	.0000
6.862	69.797	.4573	87.32	3.836	22.77	.3531-1	103.3	.0000
6.854	69.811	.4573	87.53	3.836	22.82	.3520-1	103.6	.0000
6.845	69.844	.4573	87.74	3.836	22.87	.3508-1	103.8	.0000
6.837	69.867	.4573	87.95	3.837	22.92	.3496-1	104.1	.0000
6.829	69.890	.4572	88.16	3.837	22.97	.3484-1	104.4	.0000
6.821	69.914	.4572	88.37	3.838	23.03	.3473-1	104.6	.0000
6.813	69.937	.4572	88.58	3.838	23.08	.3461-1	104.8	.0000
6.805	69.960	.4572	88.79	3.838	23.13	.3450-1	105.1	.0000
6.796	69.983	.4572	88.99	3.839	23.19	.3439-1	105.3	.0000
6.788	70.006	.4571	89.19	3.839	23.24	.3428-1	105.6	.0000
6.772	70.028	.4571	89.43	3.839	23.29	.3416-1	105.8	.0000
6.764	70.051	.4571	89.64	3.840	23.34	.3404-1	106.1	.0000
6.756	70.097	.4570	90.06	3.841	23.45	.3382-1	106.6	.0000
6.748	70.119	.4570	90.28	3.841	23.50	.3371-1	106.8	.0000
6.740	70.142	.4570	90.49	3.841	23.56	.3360-1	107.1	.0000
6.725	70.165	.4570	90.70	3.842	23.62	.3349-1	107.3	.0000
6.717	70.187	.4569	90.91	3.842	23.68	.3338-1	107.6	.0000
6.709	70.209	.4569	91.13	3.842	23.73	.3327-1	107.8	.0000
6.701	70.232	.4569	91.34	3.843	23.77	.3316-1	108.1	.0000
6.693	70.254	.4569	91.56	3.843	23.82	.3305-1	108.3	.0000
6.685	70.277	.4568	91.77	3.844	23.88	.3294-1	108.6	.0000
6.677	70.311	.4568	91.99	3.844	23.93	.3283-1	108.8	.0000
6.670	70.321	.4568	92.20	3.844	23.98	.3273-1	109.1	.0000
6.662	70.345	.4568	92.43	3.845	24.04	.3262-1	109.3	.0000
6.654	70.367	.4567	92.65	3.845	24.09	.3251-1	109.6	.0000
6.646	70.409	.4567	93.06	3.845	24.15	.3241-1	109.8	.0000
6.639	70.431	.4567	93.28	3.846	24.20	.3230-1	110.1	.0000
6.631	70.453	.4567	93.49	3.846	24.31	.3220-1	110.3	.0000
6.623	70.475	.4567	93.71	3.846	24.36	.3209-1	110.6	.0000
6.616	70.497	.4566	93.93	3.847	24.42	.3199-1	110.9	.0000
6.608	70.519	.4566	94.15	3.847	24.47	.3188-1	111.1	.0000
6.600	70.540	.4566	94.36	3.848	24.53	.3178-1	111.4	.0000
6.593	70.562	.4566	94.58	3.848	24.58	.3168-1	111.6	.0000
6.585	70.584	.4566	94.80	3.848	24.63	.3157-1	111.9	.0000
6.578	70.605	.4565	95.02	3.849	24.69	.3147-1	112.1	.0000
6.570	70.627	.4565	95.23	3.849	24.74	.3137-1	112.4	.0000
6.562	70.648	.4565	95.45	3.849	24.80	.3127-1	112.6	.0000
6.555	70.670	.4565	95.67	3.849	24.85	.3117-1	112.9	.0000
6.547	70.692	.4564	95.89	3.850	24.91	.3107-1	113.2	.0000
6.540	70.712	.4564	96.10	3.850	24.96	.3097-1	113.4	.0000
6.532	70.734	.4564	96.33	3.850	25.02	.3087-1	113.7	.0000
6.525	70.755	.4564	96.55	3.851	25.07	.3077-1	113.9	.0000
6.518	70.776	.4564	96.77	3.851	25.13	.3067-1	114.2	.0000
6.510	70.797	.4563	96.99	3.851	25.18	.3057-1	114.4	.0000
6.503	70.819	.4563	97.21	3.851	25.24	.3048-1	114.7	.0000
6.495	70.840	.4563	97.43	3.852	25.29	.3038-1	115.0	.0000
6.488	70.861	.4563	97.65	3.852	25.35	.3028-1	115.3	.0000
6.481	70.882	.4563	97.87	3.853	25.40	.3019-1	115.6	.0000
6.473	70.903	.4562	98.10	3.853	25.46	.3009-1	115.9	.0000
6.466	70.923	.4562	98.32	3.854	25.51	.2999-1	116.2	.0000
6.459	70.944	.4562	98.54	3.854	25.57	.2989-1	116.5	.0000
6.451	70.965	.4562	98.76	3.854	25.63	.2971-1	116.8	.0000
6.444	70.986	.4562	98.99	3.854	25.68	.2962-1	117.1	.0000
6.437	71.007	.4561	99.21	3.855	25.74	.2952-1	117.3	.0000
6.422	71.028	.4561	99.43	3.855	25.80	.2943-1	117.6	.0000
6.415	71.048	.4561	99.65	3.855	25.85	.2934-1	117.8	.0000
6.408	71.069	.4561	99.86	3.856	25.90	.2925-1	118.1	.0000
6.401	71.109	.4560	100.08	3.856	25.96	.2915-1	118.4	.0000
6.394	71.130	.4560	100.30	3.857	26.02	.2906-1	118.6	.0000
6.386	71.150	.4560	100.52	3.857	26.07	.2897-1	118.9	.0000

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/p <sub>t</sub>	A°/A	V/V <sub>t</sub>	V/A°
9.00	.2410 - 3	.6749 - 8	.3571 - 1	.1890	.1627 - 1	.2041 - 1	.9820	1.96396
9.01	.2398 - 3	.6728 - 8	.3564 - 1	.1888	.1628 - 1	.2034 - 1	.9820	1.96404
9.02	.2387 - 3	.6706 - 8	.3556 - 1	.1886	.1629 - 1	.2028 - 1	.9821	1.96412
9.03	.2376 - 3	.6685 - 8	.3549 - 1	.1884	.1630 - 1	.2022 - 1	.9821	1.96419
9.04	.2365 - 3	.6664 - 8	.3542 - 1	.1882	.1631 - 1	.2016 - 1	.9822	1.96427
9.05	.2354 - 3	.6642 - 8	.3535 - 1	.1880	.1632 - 1	.2009 - 1	.9822	1.96435
9.06	.2343 - 3	.6621 - 8	.3528 - 1	.1878	.1633 - 1	.2003 - 1	.9823	1.96442
9.07	.2332 - 3	.6600 - 8	.3521 - 1	.1876	.1634 - 1	.1996 - 1	.9823	1.96450
9.08	.2321 - 3	.6579 - 8	.3514 - 1	.1874	.1635 - 1	.1990 - 1	.9823	1.96458
9.09	.2310 - 3	.6558 - 8	.3507 - 1	.1872	.1636 - 1	.1984 - 1	.9823	1.96465
9.10	.2300 - 3	.6537 - 8	.3499 - 1	.1870	.1637 - 1	.1977 - 1	.9824	1.96473
9.11	.2290 - 3	.6516 - 8	.3492 - 1	.1868	.1638 - 1	.1971 - 1	.9824	1.96480
9.12	.2280 - 3	.6495 - 8	.3485 - 1	.1866	.1639 - 1	.1965 - 1	.9824	1.96488
9.13	.2269 - 3	.6474 - 8	.3478 - 1	.1864	.1640 - 1	.1959 - 1	.9825	1.96495
9.14	.2258 - 3	.6454 - 8	.3471 - 1	.1862	.1641 - 1	.1953 - 1	.9825	1.96503
9.15	.2247 - 3	.6434 - 8	.3464 - 1	.1860	.1642 - 1	.1947 - 1	.9826	1.96510
9.16	.2236 - 3	.6414 - 8	.3457 - 1	.1858	.1643 - 1	.1941 - 1	.9826	1.96518
9.17	.2225 - 3	.6394 - 8	.3450 - 1	.1856	.1644 - 1	.1934 - 1	.9826	1.96526
9.18	.2214 - 3	.6373 - 8	.3443 - 1	.1854	.1645 - 1	.1928 - 1	.9827	1.96534
9.19	.2203 - 3	.6353 - 8	.3436 - 1	.1852	.1646 - 1	.1922 - 1	.9827	1.96540
9.20	.2186 - 3	.6333 - 8	.3423 - 1	.1850	.1529 - 1	.1916 - 1	.9827	1.96547
9.21	.2175 - 3	.6313 - 8	.3416 - 1	.1848	.1524 - 1	.1911 - 1	.9828	1.96554
9.22	.2164 - 3	.6294 - 8	.3409 - 1	.1846	.1520 - 1	.1905 - 1	.9828	1.96562
9.23	.2153 - 3	.6274 - 8	.3402 - 1	.1844	.1515 - 1	.1899 - 1	.9828	1.96569
9.24	.2142 - 3	.6254 - 8	.3395 - 1	.1842	.1510 - 1	.1893 - 1	.9829	1.96576
9.25	.2131 - 3	.6234 - 8	.3388 - 1	.1840	.1506 - 1	.1887 - 1	.9829	1.96583
9.26	.2120 - 3	.6214 - 8	.3381 - 1	.1839	.1502 - 1	.1882 - 1	.9830	1.96591
9.27	.2109 - 3	.6194 - 8	.3374 - 1	.1837	.1498 - 1	.1876 - 1	.9830	1.96598
9.28	.2098 - 3	.6174 - 8	.3367 - 1	.1835	.1494 - 1	.1870 - 1	.9830	1.96605
9.29	.2087 - 3	.6154 - 8	.3360 - 1	.1833	.1490 - 1	.1864 - 1	.9831	1.96612
9.30	.2076 - 3	.6134 - 8	.3353 - 1	.1831	.1486 - 1	.1858 - 1	.9831	1.96619
9.31	.2065 - 3	.6114 - 8	.3346 - 1	.1829	.1482 - 1	.1852 - 1	.9831	1.96626
9.32	.2054 - 3	.6094 - 8	.3339 - 1	.1827	.1478 - 1	.1847 - 1	.9832	1.96633
9.33	.2043 - 3	.6074 - 8	.3332 - 1	.1825	.1474 - 1	.1842 - 1	.9832	1.96640
9.34	.2032 - 3	.6054 - 8	.3325 - 1	.1823	.1470 - 1	.1837 - 1	.9832	1.96647
9.35	.2021 - 3	.6034 - 8	.3318 - 1	.1821	.1466 - 1	.1832 - 1	.9833	1.96654
9.36	.2010 - 3	.6014 - 8	.3311 - 1	.1819	.1462 - 1	.1826 - 1	.9833	1.96661
9.37	.1998 - 3	.5994 - 8	.3304 - 1	.1817	.1458 - 1	.1821 - 1	.9833	1.96668
9.38	.1987 - 3	.5974 - 8	.3297 - 1	.1815	.1454 - 1	.1815 - 1	.9834	1.96675
9.39	.1966 - 3	.5954 - 8	.3290 - 1	.1813	.1450 - 1	.1809 - 1	.9834	1.96682
9.40	.1954 - 3	.5934 - 8	.3284 - 1	.1812	.1446 - 1	.1804 - 1	.9834	1.96689
9.41	.1944 - 3	.5914 - 8	.3277 - 1	.1810	.1442 - 1	.1799 - 1	.9835	1.96696
9.42	.1933 - 3	.5894 - 8	.3270 - 1	.1808	.1438 - 1	.1794 - 1	.9835	1.96703
9.43	.1922 - 3	.5874 - 8	.3263 - 1	.1806	.1434 - 1	.1789 - 1	.9835	1.96710
9.44	.1911 - 3	.5854 - 8	.3257 - 1	.1805	.1430 - 1	.1784 - 1	.9836	1.96718
9.45	.1900 - 3	.5834 - 8	.3250 - 1	.1803	.1426 - 1	.1779 - 1	.9836	1.96723
9.46	.1889 - 3	.5814 - 8	.3244 - 1	.1801	.1422 - 1	.1774 - 1	.9836	1.96730
9.47	.1878 - 3	.5794 - 8	.3237 - 1	.1799	.1418 - 1	.1769 - 1	.9837	1.96736
9.48	.1867 - 3	.5784 - 8	.3230 - 1	.1797	.1414 - 1	.1764 - 1	.9837	1.96743
9.49	.1856 - 3	.5764 - 8	.3223 - 1	.1795	.1410 - 1	.1759 - 1	.9837	1.96750
9.50	.1845 - 3	.5743 - 8	.3217 - 1	.1794	.1406 - 1	.1754 - 1	.9838	1.96757
9.51	.1834 - 3	.5723 - 8	.3210 - 1	.1792	.1402 - 1	.1749 - 1	.9838	1.96763
9.52	.1823 - 3	.5703 - 8	.3204 - 1	.1790	.1398 - 1	.1744 - 1	.9838	1.96770
9.53	.1812 - 3	.5683 - 8	.3197 - 1	.1788	.1394 - 1	.1739 - 1	.9839	1.96776
9.54	.1801 - 3	.5663 - 8	.3191 - 1	.1786	.1390 - 1	.1734 - 1	.9839	1.96783
9.55	.1789 - 3	.5643 - 8	.3185 - 1	.1785	.1386 - 1	.1729 - 1	.9839	1.96790
9.56	.1778 - 3	.5623 - 8	.3178 - 1	.1783	.1382 - 1	.1724 - 1	.9840	1.96796
9.57	.1767 - 3	.5603 - 8	.3172 - 1	.1781	.1378 - 1	.1719 - 1	.9840	1.96803
9.58	.1756 - 3	.5583 - 8	.3165 - 1	.1779	.1374 - 1	.1714 - 1	.9840	1.96809
9.59	.1745 - 3	.5563 - 8	.3158 - 1	.1777	.1370 - 1	.1709 - 1	.9841	1.96816
9.60	.1734 - 3	.5543 - 8	.3151 - 1	.1776	.1366 - 1	.1748 - 1	.9838	1.96822
9.61	.1723 - 3	.5523 - 8	.3144 - 1	.1774	.1362 - 1	.1743 - 1	.9838	1.96829
9.62	.1712 - 3	.5503 - 8	.3137 - 1	.1772	.1358 - 1	.1738 - 1	.9839	1.96835
9.63	.1701 - 3	.5483 - 8	.3130 - 1	.1770	.1354 - 1	.1733 - 1	.9839	1.96841
9.64	.1689 - 3	.5463 - 8	.3123 - 1	.1768	.1350 - 1	.1728 - 1	.9840	1.96846
9.65	.1678 - 3	.5443 - 8	.3116 - 1	.1766	.1346 - 1	.1723 - 1	.9840	1.96851
9.66	.1667 - 3	.5423 - 8	.3109 - 1	.1765	.1342 - 1	.1718 - 1	.9843	1.96857
9.67	.1656 - 3	.5403 - 8	.3102 - 1	.1764	.1338 - 1	.1713 - 1	.9843	1.96863
9.68	.1645 - 3	.5383 - 8	.3095 - 1	.1763	.1334 - 1	.1708 - 1	.9844	1.96869
9.69	.1634 - 3	.5363 - 8	.3088 - 1	.1762	.1330 - 1	.1703 - 1	.9844	1.96875
9.70	.1623 - 3	.5343 - 8	.3081 - 1	.1761	.1326 - 1	.1698 - 1	.9844	1.96881
9.71	.1612 - 3	.5323 - 8	.3074 - 1	.1760	.1322 - 1	.1693 - 1	.9845	1.96888
9.72	.1601 - 3	.5303 - 8	.3067 - 1	.1759	.1318 - 1	.1688 - 1	.9845	1.96895
9.73	.1589 - 3	.5283 - 8	.3060 - 1	.1758	.1314 - 1	.1683 - 1	.9845	1.96902
9.74	.1578 - 3	.5263 - 8	.3053 - 1	.1757	.1310 - 1	.1678 - 1	.9846	1.96909
9.75	.1567 - 3	.5243 - 8	.3046 - 1	.1756	.1306 - 1	.1673 - 1	.9846	1.96917
9.76	.1556 - 3	.5223 - 8	.3039 - 1	.1755	.1302 - 1	.1668 - 1	.9846	1.96923
9.77	.1545 - 3	.5213 - 8	.3032 - 1	.1754	.1298 - 1	.1663 - 1	.9846	1.96929
9.78	.1534 - 3	.5203 - 8	.3025 - 1	.1753	.1294 - 1	.1658 - 1	.9847	1.96935
9.79	.1523 - 3	.5193 - 8	.3018 - 1	.1752	.1290 - 1	.1653 - 1	.9847	1.96942
9.80	.1512 - 3	.5182 - 8	.3011 - 1	.1751	.1286 - 1	.1648 - 1	.9847	1.96948
9.81	.1501 - 3	.5172 - 8	.3004 - 1	.1750	.1282 - 1	.1643 - 1	.9848	1.96954
9.82	.1490 - 3	.5161 - 8	.3007 - 1	.1749	.1278 - 1	.1638 - 1	.9848	1.96960
9.83	.1479 - 3	.5151 - 8	.3000 - 1	.1748	.1274 - 1	.1633 - 1	.9848	1.96966
9.84	.1468 - 3	.5140 - 8	.2993 - 1	.1747	.1270 - 1	.1628 - 1	.9848	1.96972
9.85	.1457 - 3	.5129 - 8	.2986 - 1	.1746	.1266 - 1	.1623 - 1	.9849	1.96978
9.86	.1446 - 3	.5119 - 8	.2979 - 1	.1745	.1262 - 1	.1618 - 1	.9849	1.96984
9.87	.1435 - 3	.5109 - 8	.2972 - 1	.1744	.1258 - 1	.1613 - 1	.9849	1.96990
9.88	.1424 - 3	.5099 - 8	.2965 - 1	.1743	.1254 - 1	.1608 - 1	.9849	1.96996
9.89	.1413 - 3	.5089 - 8	.2958 - 1	.1742	.1250 - 1	.1603 - 1	.9850	1.97002
9.90	.1402 - 3	.5079 - 8	.2951 - 1	.1741	.1246 - 1	.1599 - 1	.9850	1.97008
9.91	.1391 - 3	.5069 - 8	.2944 - 1	.1740	.1242 - 1	.1594 - 1	.9851	1.97014
9.92	.1380 - 3	.5059 - 8	.2937 - 1	.1739	.1238 - 1	.1590 - 1	.9851	1.97019
9.93	.1369 - 3	.5049 - 8	.2930 - 1	.1738	.1234 - 1	.1586 - 1	.9851	1.97025
9.94	.1349 - 3	.5039 - 8	.2923 - 1	.1737	.1230 - 1	.1582 - 1	.9852	1.97031
9.95	.1328 - 3	.5029 - 8	.2915 - 1	.1736	.1226 - 1	.1578 - 1	.9852	1.97037
9.96	.1307 - 3	.5019 - 8	.2908 - 1	.1735	.1222 - 1	.1574 - 1	.9852	1.97043
9.97	.1286 - 3	.5009 - 8	.2900 - 1	.1734	.1218 - 1	.1570 - 1	.9852	1.97049
9.98	.1265 - 3	.4990 - 8	.2893 - 1	.1733	.1214 - 1	.1566 - 1	.9852	1.97054
9.99	.1245 - 3	.4980 - 8	.2885 - 1	.1732	.1210 - 1	.1562 - 1	.9853	1.97060

## FUNDAMENTAL FLOW EQUATIONS

$u$	$v$	$M_2$	$p_2/p_1$	$p_2/p_1$	$T_2/T_1$	$p_{t,2}/p_{t,1}$	$p_{t,2}/p_1$	$M$
6.579	71.171	4560	1.010	3.857	26.19	.2879-1	119.4	9.000
6.572	71.191	4560	1.012	3.857	26.24	.2870-1	119.7	9.011
6.565	71.211	4559	1.015	3.858	26.30	.2861-1	119.9	9.022
6.558	71.231	4559	1.017	3.858	26.35	.2852-1	120.2	9.034
6.551	71.252	4559	1.019	3.859	26.42	.2843-1	120.4	9.045
6.544	71.272	4559	1.021	3.859	26.49	.2835-1	120.7	9.056
6.537	71.292	4559	1.023	3.859	26.56	.2826-1	121.0	9.067
6.530	71.312	4558	1.025	3.859	26.63	.2817-1	121.3	9.078
6.523	71.332	4558	1.027	3.860	26.69	.2807-1	121.5	9.089
6.516	71.352	4558	1.029	3.860	26.75	.2799-1	121.8	9.099
6.509	71.372	4558	1.031	3.860	26.75	.2790-1	122.1	9.110
6.502	71.392	4558	1.033	3.860	26.81	.2781-1	122.4	9.121
6.295	71.412	4558	1.035	3.861	26.86	.2773-1	122.6	9.132
6.288	71.431	4557	1.037	3.861	26.92	.2764-1	122.8	9.143
6.281	71.451	4557	1.040	3.861	26.98	.2755-1	123.0	9.154
6.274	71.471	4557	1.042	3.862	27.04	.2747-1	123.2	9.165
6.267	71.491	4557	1.044	3.862	27.09	.2738-1	123.4	9.176
6.261	71.510	4557	1.046	3.862	27.15	.2730-1	123.6	9.187
6.254	71.530	4556	1.048	3.862	27.21	.2722-1	123.8	9.198
6.247	71.549	4556	1.050	3.863	27.27	.2713-1	124.0	9.209
6.240	71.569	4556	1.056	3.863	27.34	.2705-1	124.6	9.220
6.233	71.588	4556	1.058	3.863	27.38	.2697-1	125.0	9.231
6.227	71.608	4556	1.060	3.864	27.44	.2688-1	125.3	9.242
6.220	71.627	4556	1.062	3.864	27.50	.2679-1	125.6	9.253
6.213	71.647	4556	1.065	3.864	27.56	.2670-1	125.9	9.264
6.206	71.666	4555	1.068	3.865	27.61	.2664-1	126.1	9.285
6.193	71.685	4555	1.070	3.865	27.67	.2655-1	126.4	9.296
6.186	71.704	4555	1.072	3.865	27.73	.2645-1	126.7	9.307
6.179	71.724	4554	1.074	3.866	27.78	.2639-1	127.0	9.318
6.173	71.743	4554	1.076	3.866	27.84	.2631-1	127.2	9.329
6.166	71.762	4554	1.079	3.866	27.90	.2623-1	127.5	9.340
6.159	71.781	4554	1.081	3.866	27.96	.2615-1	127.8	9.351
6.153	71.800	4554	1.083	3.866	28.02	.2607-1	128.0	9.362
6.146	71.819	4554	1.086	3.867	28.08	.2599-1	128.3	9.373
6.140	71.838	4554	1.088	3.867	28.13	.2591-1	128.6	9.384
6.133	71.857	4554	1.090	3.867	28.19	.2584-1	128.9	9.395
6.126	71.876	4553	1.092	3.868	28.25	.2576-1	129.1	9.406
6.120	71.895	4553	1.094	3.868	28.31	.2568-1	129.4	9.417
6.113	71.913	4553	1.097	3.868	28.37	.2560-1	129.7	9.428
6.107	71.932	4553	1.100	3.868	28.43	.2552-1	130.0	9.439
6.100	71.951	4553	1.102	3.869	28.49	.2545-1	130.2	9.450
6.094	71.969	4553	1.104	3.869	28.54	.2537-1	130.5	9.461
6.087	71.988	4553	1.107	3.869	28.60	.2529-1	130.8	9.472
6.081	72.007	4553	1.109	3.870	28.66	.2522-1	131.1	9.483
6.074	72.025	4552	1.111	3.870	28.72	.2514-1	131.3	9.494
6.068	72.044	4552	1.114	3.870	28.78	.2507-1	131.6	9.505
6.062	72.062	4552	1.116	3.870	28.84	.2499-1	131.9	9.516
6.055	72.081	4551	1.119	3.871	28.90	.2492-1	132.2	9.527
6.049	72.118	4551	1.121	3.871	28.96	.2484-1	132.4	9.538
6.042	72.136	4551	1.124	3.871	29.02	.2477-1	132.7	9.549
6.036	72.154	4551	1.126	3.872	29.14	.2468-1	133.0	9.550
6.030	72.173	4551	1.128	3.872	29.19	.2460-1	133.3	9.561
6.023	72.191	4550	1.130	3.872	29.25	.2454-1	133.6	9.572
6.017	72.209	4550	1.133	3.873	29.31	.2447-1	133.8	9.583
6.011	72.227	4550	1.135	3.873	29.37	.2440-1	134.1	9.594
6.004	72.245	4550	1.138	3.873	29.43	.2433-1	134.4	9.605
5.998	72.263	4550	1.140	3.873	29.49	.2425-1	134.7	9.616
5.992	72.281	4550	1.142	3.873	29.55	.2418-1	135.0	9.627
5.985	72.299	4549	1.147	3.874	29.61	.2410-1	135.3	9.638
5.979	72.317	4549	1.150	3.874	29.67	.2402-1	135.6	9.649
5.973	72.335	4549	1.152	3.874	29.73	.2390-1	136.1	9.660
5.967	72.353	4549	1.154	3.874	29.79	.2382-1	136.4	9.671
5.960	72.371	4549	1.157	3.875	29.85	.2375-1	136.7	9.682
5.954	72.389	4549	1.159	3.875	29.91	.2368-1	136.9	9.693
5.948	72.407	4548	1.162	3.875	29.97	.2361-1	137.2	9.704
5.942	72.425	4548	1.164	3.875	30.03	.2354-1	137.5	9.715
5.936	72.442	4548	1.166	3.876	30.09	.2348-1	137.8	9.726
5.930	72.460	4548	1.169	3.876	30.15	.2341-1	138.1	9.737
5.923	72.478	4548	1.171	3.876	30.22	.2334-1	138.4	9.748
5.917	72.495	4548	1.174	3.876	30.28	.2327-1	138.8	9.759
5.911	72.513	4548	1.176	3.877	30.34	.2320-1	139.1	9.770
5.905	72.530	4547	1.178	3.877	30.40	.2313-1	139.4	9.781
5.899	72.548	4547	1.181	3.877	30.46	.2306-1	139.7	9.792
5.893	72.565	4547	1.183	3.878	30.52	.2300-1	139.9	9.803
5.887	72.583	4547	1.186	3.878	30.58	.2293-1	140.1	9.814
5.881	72.600	4547	1.187	3.878	30.64	.2286-1	140.4	9.825
5.875	72.618	4547	1.190	3.878	30.70	.2280-1	140.6	9.836
5.869	72.635	4546	1.191	3.878	30.76	.2273-1	140.9	9.847
5.863	72.652	4546	1.193	3.879	30.82	.2266-1	141.2	9.858
5.857	72.670	4546	1.196	3.879	30.89	.2260-1	141.5	9.869
5.851	72.687	4546	1.200	3.880	30.95	.2253-1	141.8	9.880
5.845	72.704	4546	1.203	3.880	31.01	.2247-1	142.1	9.891
5.839	72.721	4546	1.205	3.880	31.07	.2240-1	142.4	9.892
5.833	72.738	4546	1.208	3.880	31.13	.2234-1	142.7	9.893
5.827	72.756	4546	1.210	3.880	31.19	.2227-1	143.0	9.894
5.821	72.773	4545	1.212	3.880	31.25	.2221-1	143.3	9.895
5.815	72.790	4545	1.214	3.881	31.31	.2214-1	143.6	9.896
5.809	72.807	4545	1.216	3.881	31.38	.2208-1	143.9	9.897
5.803	72.824	4545	1.220	3.881	31.44	.2202-1	144.1	9.898
5.797	72.841	4545	1.223	3.881	31.50	.2195-1	144.4	9.909
5.791	72.858	4545	1.225	3.881	31.56	.2189-1	144.7	9.910
5.785	72.874	4545	1.228	3.882	31.63	.2183-1	145.0	9.912
5.780	72.891	4544	1.230	3.882	31.69	.2176-1	145.3	9.913
5.774	72.908	4544	1.233	3.882	31.75	.2170-1	145.6	9.914
5.768	72.925	4544	1.235	3.883	31.81	.2164-1	145.9	9.915
5.762	72.942	4544	1.238	3.883	31.87	.2158-1	146.2	9.916
5.756	72.958	4544	1.240	3.883	31.94	.2151-1	146.4	9.917
5.751	72.975	4544	1.243	3.883	32.00	.2145-1	146.7	9.918
5.745	72.992	4543	1.244	3.883	32.06	.2139-1	147.0	9.919

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/p <sub>t</sub>	A°/A	V/V <sub>0</sub>	V/a <sup>2</sup>
10.00	.1448 -3	.4971 -2	.2913 -1	.1707	.1207 -1	.1508 -1	.9853	1.97066
10.01	.14441 -3	.4956 -2	.2917 -1	.1705	.1203 -1	.1504 -1	.9854	1.97072
10.02	.14434 -3	.4953 -2	.2920 -1	.1708	.1196 -1	.1495 -1	.9854	1.97077
10.03	.14430 -3	.4952 -2	.2889 -1	.1700	.1193 -1	.1491 -1	.9854	1.97083
10.04	.14429 -3	.4899 -2	.2885 -1	.1698	.1189 -1	.1487 -1	.9855	1.97089
10.05	.14428 -3	.4885 -2	.2879 -1	.1697	.1186 -1	.1482 -1	.9855	1.97100
10.06	.14426 -3	.4871 -2	.2873 -1	.1695	.1183 -1	.1478 -1	.9855	1.97106
10.07	.14420 -3	.4857 -2	.2866 -1	.1693	.1179 -1	.1474 -1	.9856	1.97112
10.08	.14393 -3	.4843 -2	.2862 -1	.1692	.1176 -1	.1470 -1	.9856	1.97117
10.09	.14386 -3	.4843 -2	.2862 -1	.1692	.1176 -1	.1470 -1	.9856	1.97117
10.10	.1380 -3	.4829 -2	.2857 -1	.1690	.1173 -1	.1465 -1	.9856	1.97122
10.11	.13806 -3	.4815 -2	.2846 -1	.1687	.1169 -1	.1461 -1	.9856	1.97128
10.12	.13806 -3	.4801 -2	.2846 -1	.1687	.1166 -1	.1457 -1	.9857	1.97134
10.13	.13806 -3	.4787 -2	.2846 -1	.1685	.1163 -1	.1453 -1	.9857	1.97139
10.14	.13803 -3	.4773 -2	.2835 -1	.1684	.1160 -1	.1449 -1	.9857	1.97145
10.15	.13807 -3	.4760 -2	.2830 -1	.1682	.1156 -1	.1445 -1	.9858	1.97150
10.16	.13804 -3	.4746 -2	.2824 -1	.1680	.1152 -1	.1441 -1	.9858	1.97156
10.17	.13804 -3	.4733 -2	.2819 -1	.1678	.1148 -1	.1437 -1	.9858	1.97161
10.18	.13804 -3	.4719 -2	.2805 -1	.1677	.1147 -1	.1438 -1	.9858	1.97167
10.19	.13802 -3	.4705 -2	.2801 -1	.1676	.1143 -1	.1428 -1	.9859	1.97172
10.20	.1315 -3	.4698 -2	.2803 -1	.1674	.1140 -1	.1424 -1	.9859	1.97177
10.21	.13030 -3	.4679 -2	.2797 -1	.1673	.1137 -1	.1420 -1	.9859	1.97183
10.22	.13030 -3	.4665 -2	.2792 -1	.1671	.1134 -1	.1416 -1	.9859	1.97187
10.23	.12929 -3	.4658 -2	.2787 -1	.1669	.1131 -1	.1412 -1	.9860	1.97194
10.24	.12890 -3	.4659 -2	.2781 -1	.1668	.1128 -1	.1408 -1	.9860	1.97199
10.25	.12890 -3	.4626 -2	.2775 -1	.1666	.1125 -1	.1404 -1	.9860	1.97204
10.26	.12876 -3	.4618 -2	.2771 -1	.1664	.1121 -1	.1400 -1	.9861	1.97210
10.27	.12866 -3	.4609 -2	.2766 -1	.1663	.1118 -1	.1397 -1	.9861	1.97218
10.28	.12860 -3	.4606 -2	.2760 -1	.1661	.1113 -1	.1393 -1	.9861	1.97220
10.29	.12860 -3	.4579 -2	.2755 -1	.1660	.1112 -1	.1389 -1	.9861	1.97226
10.30	.12545 -3	.4560 -2	.2750 -1	.1658	.1109 -1	.1385 -1	.9862	1.97231
10.31	.12448 -3	.4548 -2	.2745 -1	.1657	.1106 -1	.1382 -1	.9862	1.97235
10.32	.12443 -3	.4538 -2	.2740 -1	.1655	.1103 -1	.1379 -1	.9862	1.97241
10.33	.12357 -3	.4528 -2	.2735 -1	.1653	.1100 -1	.1376 -1	.9862	1.97247
10.34	.12353 -3	.4509 -2	.2729 -1	.1652	.1097 -1	.1369 -1	.9863	1.97252
10.35	.12353 -3	.4499 -2	.2725 -1	.1651	.1093 -1	.1366 -1	.9863	1.97257
10.36	.12319 -3	.4484 -2	.2719 -1	.1649	.1090 -1	.1363 -1	.9863	1.97262
10.37	.12319 -3	.4471 -2	.2714 -1	.1647	.1087 -1	.1358 -1	.9863	1.97267
10.38	.12308 -3	.4459 -2	.2709 -1	.1646	.1084 -1	.1354 -1	.9864	1.97272
10.39	.12302 -3	.4446 -2	.2704 -1	.1644	.1081 -1	.1350 -1	.9864	1.97276
10.40	.11977 -3	.4434 -2	.2699 -1	.1643	.1078 -1	.1347 -1	.9864	1.97283
10.41	.11967 -3	.4420 -2	.2694 -1	.1642	.1075 -1	.1343 -1	.9864	1.97293
10.42	.11960 -3	.4400 -2	.2688 -1	.1640	.1072 -1	.1339 -1	.9865	1.97303
10.43	.11950 -3	.4397 -2	.2684 -1	.1638	.1070 -1	.1335 -1	.9865	1.97308
10.44	.11747 -3	.4384 -2	.2679 -1	.1637	.1067 -1	.1332 -1	.9865	1.97313
10.45	.11669 -3	.4378 -2	.2674 -1	.1635	.1064 -1	.1328 -1	.9865	1.97318
10.46	.11664 -3	.4360 -2	.2669 -1	.1634	.1061 -1	.1324 -1	.9866	1.97323
10.47	.11558 -3	.4348 -2	.2666 -1	.1632	.1058 -1	.1321 -1	.9866	1.97328
10.48	.11553 -3	.4336 -2	.2659 -1	.1631	.1055 -1	.1317 -1	.9866	1.97333
10.49	.11474 -3	.4323 -2	.2654 -1	.1629	.1052 -1	.1314 -1	.9866	1.97338
10.50	.11412 -3	.4311 -2	.2649 -1	.1628	.1049 -1	.1310 -1	.9867	1.97333
10.51	.11377 -3	.4299 -2	.2644 -1	.1626	.1046 -1	.1306 -1	.9867	1.97338
10.52	.11332 -3	.4288 -2	.2639 -1	.1625	.1044 -1	.1303 -1	.9867	1.97343
10.53	.11265 -3	.4276 -2	.2634 -1	.1623	.1041 -1	.1299 -1	.9867	1.97348
10.54	.11216 -3	.4264 -2	.2629 -1	.1622	.1038 -1	.1296 -1	.9868	1.97353
10.55	.11116 -3	.4252 -2	.2623 -1	.1620	.1035 -1	.1292 -1	.9868	1.97358
10.56	.11063 -3	.4240 -2	.2618 -1	.1619	.1032 -1	.1288 -1	.9868	1.97363
10.57	.11016 -3	.4229 -2	.2615 -1	.1617	.1030 -1	.1284 -1	.9868	1.97368
10.58	.11010 -3	.4217 -2	.2610 -1	.1616	.1027 -1	.1280 -1	.9868	1.97373
10.59	.10956 -3	.4205 -2	.2603 -1	.1614	.1024 -1	.1277 -1	.9869	1.97377
10.60	.10913 -3	.4194 -2	.2601 -1	.1613	.1021 -1	.1274 -1	.9869	1.97382
10.61	.10856 -3	.4182 -2	.2607 -1	.1612	.1018 -1	.1271 -1	.9869	1.97387
10.62	.10811 -3	.4171 -2	.2599 -1	.1610	.1015 -1	.1267 -1	.9870	1.97392
10.63	.10763 -3	.4159 -2	.2596 -1	.1608	.1013 -1	.1264 -1	.9870	1.97397
10.64	.10711 -3	.4148 -2	.2588 -1	.1607	.1010 -1	.1260 -1	.9870	1.97402
10.65	.10666 -3	.4136 -2	.2577 -1	.1605	.1007 -1	.1256 -1	.9870	1.97406
10.66	.10651 -3	.4125 -2	.2572 -1	.1604	.1005 -1	.1252 -1	.9871	1.97411
10.67	.10595 -3	.4114 -2	.2562 -1	.1603	.1002 -1	.1250 -1	.9871	1.97416
10.68	.10593 -3	.4105 -2	.2558 -1	.1601	.9994 -2	.1247 -1	.9871	1.97421
10.69	.10474 -3	.4091 -2	.2558 -1	.1599	.9967 -2	.1244 -1	.9872	1.97425
10.70	.1048 -3	.4080 -2	.2553 -1	.1598	.9940 -2	.1240 -1	.9872	1.97430
10.71	.10372 -3	.4069 -2	.2549 -1	.1596	.9913 -2	.1237 -1	.9872	1.97435
10.72	.10328 -3	.4058 -2	.2544 -1	.1595	.9886 -2	.1234 -1	.9872	1.97444
10.73	.10288 -3	.4047 -2	.2540 -1	.1594	.9859 -2	.1230 -1	.9872	1.97449
10.74	.10239 -3	.4036 -2	.2535 -1	.1592	.9834 -2	.1227 -1	.9872	1.97453
10.75	.10186 -3	.4030 -2	.2530 -1	.1591	.9808 -2	.1224 -1	.9873	1.97458
10.76	.10099 -3	.4003 -2	.2521 -1	.1588	.9782 -2	.1220 -1	.9873	1.97463
10.77	.10003 -3	.3998 -2	.2517 -1	.1586	.9756 -2	.1217 -1	.9873	1.97467
10.78	.10000 -3	.3991 -2	.2512 -1	.1585	.9730 -2	.1214 -1	.9874	1.97472
10.79	.10000 -3	.3971 -2	.2508 -1	.1584	.9704 -2	.1210 -1	.9874	1.97476
10.80	.99574 -4	.3971 -2	.2508 -1	.1584	.9678 -2	.1207 -1	.9874	1.97477
10.81	.99512 -4	.3969 -2	.2503 -1	.1582	.9653 -2	.1204 -1	.9874	1.97481
10.82	.99482 -4	.3964 -2	.2500 -1	.1581	.9627 -2	.1201 -1	.9874	1.97486
10.83	.99433 -4	.3959 -2	.2494 -1	.1579	.9601 -2	.1198 -1	.9875	1.97490
10.84	.99405 -4	.3953 -2	.2490 -1	.1578	.9576 -2	.1195 -1	.9875	1.97495
10.85	.99379 -4	.3948 -2	.2489 -1	.1576	.9550 -2	.1192 -1	.9875	1.97499
10.86	.99355 -4	.3942 -2	.2485 -1	.1574	.9525 -2	.1189 -1	.9875	1.97504
10.87	.99291 -4	.3947 -2	.2481 -1	.1572	.9500 -2	.1186 -1	.9876	1.97508
10.88	.99240 -4	.3940 -2	.2476 -1	.1570	.9475 -2	.1183 -1	.9876	1.97512
10.89	.99205 -4	.3936 -2	.2472 -1	.1569	.9450 -2	.1179 -1	.9876	1.97517
10.90	.9919 -4	.3865 -2	.2463 -1	.1569	.9428 -2	.1175 -1	.9876	1.97522
10.91	.99477 -4	.3855 -2	.2458 -1	.1568	.9400 -2	.1172 -1	.9876	1.97526
10.92	.99434 -4	.3844 -2	.2454 -1	.1567	.9375 -2	.1169 -1	.9877	1.97531
10.93	.99392 -4	.3834 -2	.2450 -1	.1565	.9350 -2	.1166 -1	.9877	1.97535
10.94	.99351 -4	.3824 -2	.2445 -1	.1564	.9326 -2	.1163 -1	.9877	1.97540
10.95	.99309 -4	.3814 -2	.2441 -1	.1562	.9301 -2	.1160 -1	.9877	1.97544
10.96	.99268 -4	.3803 -2	.2437 -2	.1561	.9276 -2	.1157 -1	.9877	1.97548
10.97	.99226 -4	.3793 -2	.2432 -2	.1559	.9253 -2	.1154 -1	.9877	1.97552
10.98	.99186 -4	.3787 -2	.2428 -2	.1558	.9228 -2	.1151 -1	.9877	1.97556
10.99	.99145 -4	.3773 -2	.2424 -2	.1557	.9204 -2	.1148 -1	.9878	1.97561

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
5.739	73.008	4.543	1.848	3.883	32.18	.2133-1	147.3	10.00
5.733	73.085	4.543	1.850	3.884	32.19	.2127-1	147.6	10.001
5.728	73.058	4.543	1.853	3.884	32.20	.2124-1	147.9	10.002
5.722	73.044	4.543	1.856	3.884	32.21	.2120-1	148.2	10.003
5.716	73.035	4.543	1.859	3.885	32.22	.2115-1	148.5	10.004
5.709	73.021	4.543	1.862	3.885	32.23	.2109-1	148.8	10.005
5.705	73.017	4.543	1.865	3.885	32.24	.2103-1	149.1	10.006
5.699	73.124	4.543	1.868	3.885	32.25	.2097-1	149.4	10.007
5.693	73.140	4.543	1.871	3.886	32.26	.2091-1	149.7	10.008
5.688	73.156	4.543	1.874	3.886	32.27	.2079-1	150.0	10.009
5.682	73.173	4.543	1.877	3.886	32.28	.2073-1	150.3	10.10
5.677	73.189	4.543	1.880	3.886	32.29	.2067-1	150.6	10.11
5.671	73.205	4.543	1.883	3.886	32.30	.2061-1	150.9	10.12
5.665	73.221	4.543	1.886	3.886	32.31	.2056-1	151.2	10.13
5.660	73.238	4.543	1.889	3.887	32.32	.2051-1	151.5	10.14
5.654	73.254	4.543	1.892	3.887	32.33	.2044-1	151.8	10.15
5.648	73.270	4.543	1.895	3.887	32.34	.2038-1	152.1	10.16
5.643	73.286	4.543	1.898	3.887	32.35	.2032-1	152.4	10.17
5.637	73.302	4.543	1.901	3.887	32.36	.2027-1	152.7	10.18
5.632	73.318	4.543	1.904	3.888	32.37	.2021-1	153.0	10.19
5.626	73.334	4.540	1.899	3.888	32.38	.2015-1	153.3	10.20
5.621	73.350	4.540	1.901	3.888	32.39	.2010-1	153.6	10.21
5.615	73.366	4.540	1.903	3.888	32.40	.2005-1	153.9	10.22
5.610	73.382	4.540	1.906	3.889	32.41	.1999-1	154.2	10.23
5.604	73.398	4.540	1.908	3.889	32.42	.1993-1	154.5	10.24
5.599	73.414	4.540	1.911	3.889	32.43	.1987-1	154.8	10.25
5.593	73.429	4.540	1.913	3.889	32.44	.1982-1	155.1	10.26
5.588	73.445	4.540	1.916	3.889	32.45	.1976-1	155.4	10.27
5.582	73.461	4.539	1.918	3.890	32.46	.1971-1	155.7	10.28
5.577	73.477	4.539	1.921	3.890	32.47	.1965-1	156.0	10.29
5.571	73.492	4.539	1.924	3.890	32.48	.1960-1	156.3	10.30
5.566	73.508	4.539	1.926	3.890	32.49	.1954-1	156.6	10.31
5.561	73.524	4.539	1.929	3.890	32.50	.1949-1	156.9	10.32
5.555	73.539	4.539	1.931	3.891	32.51	.1944-1	157.2	10.33
5.550	73.555	4.539	1.934	3.891	32.52	.1938-1	157.5	10.34
5.544	73.570	4.539	1.937	3.891	32.53	.1932-1	157.8	10.35
5.539	73.586	4.538	1.939	3.891	32.54	.1926-1	158.1	10.36
5.533	73.601	4.538	1.942	3.892	32.55	.1920-1	158.4	10.37
5.528	73.617	4.538	1.944	3.892	32.56	.1914-1	158.7	10.38
5.523	73.632	4.538	1.947	3.892	32.57	.1908-1	159.0	10.39
5.518	73.648	4.538	1.950	3.892	32.58	.1902-1	159.3	10.40
5.512	73.663	4.538	1.953	3.892	32.59	.1896-1	159.6	10.41
5.507	73.679	4.538	1.955	3.892	32.60	.1890-1	159.9	10.42
5.502	73.694	4.538	1.957	3.893	32.61	.1884-1	160.2	10.43
5.497	73.709	4.537	1.960	3.893	32.62	.1878-1	160.5	10.44
5.491	73.724	4.537	1.963	3.893	32.63	.1872-1	160.8	10.45
5.486	73.740	4.537	1.966	3.893	32.64	.1865-1	161.1	10.46
5.481	73.755	4.537	1.968	3.893	32.65	.1860-1	161.4	10.47
5.475	73.770	4.537	1.970	3.894	32.66	.1853-1	161.7	10.48
5.470	73.785	4.537	1.973	3.894	32.67	.1846-1	162.0	10.49
5.465	73.800	4.537	1.976	3.894	32.68	.1840-1	162.4	10.50
5.460	73.815	4.537	1.978	3.894	32.69	.1834-1	162.7	10.51
5.455	73.840	4.536	1.981	3.895	32.70	.1828-1	163.0	10.52
5.449	73.860	4.536	1.984	3.895	32.71	.1822-1	163.3	10.53
5.444	73.875	4.536	1.986	3.895	32.72	.1816-1	163.6	10.54
5.439	73.890	4.536	1.989	3.895	32.73	.1810-1	163.9	10.55
5.434	73.905	4.536	1.991	3.895	32.74	.1804-1	164.2	10.56
5.429	73.920	4.536	1.994	3.896	32.75	.1798-1	164.5	10.57
5.424	73.935	4.536	1.997	3.896	32.76	.1791-1	164.8	10.58
5.418	73.950	4.536	1.999	3.896	32.77	.1785-1	165.1	10.59
5.413	73.965	4.535	2.000	3.896	32.78	.1780-1	165.4	10.60
5.408	73.980	4.535	2.001	3.896	32.79	.1775-1	165.7	10.61
5.403	73.994	4.535	2.002	3.897	32.80	.1770-1	166.1	10.62
5.398	74.009	4.535	2.003	3.897	32.81	.1765-1	166.4	10.63
5.388	74.024	4.535	2.005	3.897	32.82	.1760-1	166.7	10.64
5.383	74.038	4.535	2.007	3.897	32.83	.1755-1	167.0	10.65
5.378	74.053	4.535	2.009	3.897	32.84	.1750-1	167.3	10.66
5.373	74.068	4.534	2.011	3.897	32.85	.1745-1	167.6	10.67
5.368	74.082	4.534	2.013	3.898	32.86	.1740-1	168.0	10.68
5.363	74.097	4.534	2.015	3.898	32.87	.1735-1	168.3	10.70
5.358	74.112	4.534	2.017	3.898	32.88	.1730-1	168.6	10.71
5.353	74.126	4.534	2.019	3.898	32.89	.1725-1	168.9	10.72
5.348	74.141	4.534	2.021	3.898	32.90	.1720-1	169.2	10.73
5.343	74.155	4.534	2.023	3.898	32.91	.1715-1	169.5	10.74
5.338	74.169	4.534	2.025	3.899	32.92	.1710-1	169.8	10.75
5.333	74.184	4.534	2.027	3.899	32.93	.1705-1	170.1	10.76
5.328	74.198	4.534	2.029	3.899	32.94	.1700-1	170.4	10.77
5.323	74.213	4.534	2.031	3.899	32.95	.1695-1	170.7	10.78
5.318	74.227	4.534	2.033	3.900	32.96	.1690-1	171.0	10.79
5.313	74.241	4.533	2.035	3.900	32.97	.1685-1	171.3	10.80
5.308	74.256	4.533	2.036	3.900	32.98	.1680-1	171.6	10.81
5.303	74.270	4.533	2.037	3.900	32.99	.1675-1	171.9	10.82
5.298	74.284	4.533	2.038	3.900	33.00	.1670-1	172.2	10.83
5.293	74.298	4.533	2.039	3.900	33.01	.1665-1	172.5	10.84
5.288	74.313	4.533	2.040	3.900	33.02	.1660-1	172.8	10.85
5.283	74.327	4.533	2.041	3.900	33.03	.1655-1	173.1	10.86
5.278	74.341	4.532	2.042	3.900	33.04	.1650-1	173.4	10.87
5.274	74.355	4.532	2.043	3.900	33.05	.1645-1	173.7	10.88
5.269	74.369	4.532	2.044	3.900	33.06	.1640-1	174.0	10.89
5.264	74.383	4.532	2.045	3.901	33.07	.1635-1	174.3	10.90
5.259	74.397	4.532	2.046	3.901	33.08	.1630-1	174.6	10.91
5.254	74.411	4.532	2.047	3.901	33.09	.1625-1	174.9	10.92
5.249	74.425	4.532	2.048	3.901	33.10	.1620-1	175.2	10.93
5.244	74.439	4.532	2.049	3.901	33.11	.1615-1	175.5	10.94
5.239	74.453	4.532	2.050	3.901	33.12	.1610-1	175.8	10.95
5.235	74.467	4.531	2.051	3.901	33.13	.1605-1	176.1	10.96
5.230	74.481	4.531	2.052	3.901	33.14	.1600-1	176.4	10.97
5.225	74.509	4.531	2.053	3.901	33.15	.1595-1	176.7	10.98

TABLE I. - VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/P <sub>t</sub>	A <sup>2</sup> /A	V/V <sub>0</sub>	V/V <sup>2</sup>
1.00	.9104-4	.3763-8	.8419-1	.1555	.9180-2	.1145-1	.9878	1.97566
1.01	.9084-4	.3743-8	.8411-1	.1554	.9153-2	.1139-1	.9879	1.97575
1.03	.8984-4	.3723-8	.8407-1	.1551	.9109-2	.1136-1	.9879	1.97579
1.04	.8945-4	.3703-8	.8402-1	.1550	.9083-2	.1133-1	.9879	1.97583
1.05	.8905-4	.3683-8	.8398-1	.1549	.9063-2	.1130-1	.9879	1.97587
1.06	.8866-4	.3663-8	.8394-1	.1547	.9038-2	.1128-1	.9880	1.97592
1.07	.8827-4	.3643-8	.8390-1	.1546	.9004-2	.1124-1	.9880	1.97596
1.08	.8788-4	.3623-8	.8386-1	.1544	.8967-2	.1121-1	.9880	1.97600
1.09	.8749-4	.3603-8	.8382-1	.1543	.8926-2	.1118-1	.9880	1.97604
1.10	.8711-4	.3583-8	.8377-1	.1542	.8944-2	.1115-1	.9880	2.97609
1.11	.8673-4	.3563-8	.8373-1	.1540	.8988-2	.1112-1	.9881	1.97613
1.12	.8635-4	.3543-8	.8369-1	.1539	.8989-2	.1109-1	.9881	1.97617
1.13	.8597-4	.3523-8	.8364-1	.1538	.8973-2	.1106-1	.9881	1.97621
1.14	.8559-4	.3503-8	.8360-1	.1537	.8953-2	.1103-1	.9881	1.97625
1.15	.8520-4	.3483-8	.8355-1	.1535	.8933-2	.1100-1	.9881	1.97630
1.16	.8481-4	.3463-8	.8350-1	.1534	.8905-2	.1098-1	.9882	1.97634
1.17	.8448-4	.3443-8	.8346-1	.1533	.8878-2	.1095-1	.9882	1.97638
1.18	.8411-4	.3423-8	.8342-1	.1531	.8876-2	.1092-1	.9882	1.97642
1.19	.8374-4	.3379-8	.8340-1	.1530	.8738-2	.1089-1	.9882	1.97646
1.20	.8338-4	.3570-8	.8336-1	.1528	.8716-2	.1086-1	.9883	1.97650
1.21	.8300-4	.3550-8	.8328-1	.1527	.8703-2	.1083-1	.9883	1.97655
1.22	.8262-4	.3530-8	.8324-1	.1526	.8687-2	.1080-1	.9883	1.97659
1.23	.8224-4	.3510-8	.8319-1	.1524	.8644-2	.1078-1	.9883	1.97663
1.24	.8186-4	.3491-8	.8315-1	.1523	.8627-2	.1075-1	.9883	1.97667
1.25	.8150-4	.3471-8	.8310-1	.1522	.8605-2	.1072-1	.9884	1.97671
1.26	.8115-4	.3451-8	.8306-1	.1520	.8583-2	.1070-1	.9884	1.97675
1.27	.8086-4	.3430-8	.8307-1	.1519	.8561-2	.1067-1	.9884	1.97679
1.28	.8053-4	.3409-8	.8303-1	.1518	.8539-2	.1064-1	.9884	1.97683
1.29	.8020-4	.3407-8	.8309-1	.1516	.8517-2	.1061-1	.9884	1.97687
1.30	.7984-4	.3478-8	.8295-1	.1515	.8495-2	.1059-1	.9885	1.97691
1.31	.7949-4	.3469-8	.8293-1	.1514	.8477-2	.1056-1	.9885	1.97695
1.32	.7915-4	.3460-8	.8288-1	.1512	.8453-2	.1053-1	.9885	1.97699
1.33	.7881-4	.3451-8	.8284-1	.1511	.8430-2	.1050-1	.9885	1.97703
1.34	.7847-4	.3441-8	.8280-1	.1510	.8409-2	.1048-1	.9885	1.97707
1.35	.7813-4	.3433-8	.8276-1	.1509	.8388-2	.1045-1	.9885	1.97711
1.36	.7780-4	.3424-8	.8272-1	.1507	.8366-2	.1042-1	.9885	1.97715
1.37	.7746-4	.3416-8	.8268-1	.1506	.8345-2	.1040-1	.9885	1.97719
1.38	.7712-4	.3409-8	.8264-1	.1505	.8323-2	.1037-1	.9886	1.97723
1.39	.7679-4	.3401-8	.8260-1	.1503	.8303-2	.1034-1	.9886	1.97727
1.40	.7647-4	.3392-8	.8256-1	.1502	.8286-2	.1032-1	.9887	1.97731
1.41	.7614-4	.3291-8	.8252-1	.1501	.8264-2	.1029-1	.9887	1.97735
1.42	.7568-4	.3272-8	.8249-1	.1500	.8240-2	.1026-1	.9887	1.97739
1.43	.7550-4	.3261-8	.8245-1	.1500	.8218-2	.1024-1	.9887	1.97743
1.44	.7534-4	.3252-8	.8241-1	.1499	.8207-2	.1021-1	.9887	1.97746
1.45	.7515-4	.3243-8	.8237-1	.1497	.8187-2	.1019-1	.9886	1.97750
1.46	.7485-4	.3234-8	.8233-1	.1496	.8167-2	.1016-1	.9886	1.97754
1.47	.7452-4	.3229-8	.8229-1	.1493	.8143-2	.1014-1	.9886	1.97758
1.48	.7419-4	.3209-8	.8226-1	.1492	.8119-2	.1011-1	.9886	1.97762
1.49	.7359-4	.3212-8	.8223-1	.1491	.8094-2	.1008-1	.9886	1.97766
1.50	.7326-4	.3204-8	.8218-1	.1489	.8076-2	.1006-1	.9886	1.97769
1.51	.7293-4	.3195-8	.8214-1	.1488	.8053-2	.1003-1	.9886	1.97773
1.52	.7260-4	.3186-8	.8211-1	.1487	.8030-2	.1000-1	.9886	1.97777
1.53	.7228-4	.3177-8	.8207-1	.1486	.8015-2	.9983-2	.9886	1.97781
1.54	.7204-4	.3170-8	.8203-1	.1484	.7992-2	.9958-2	.9886	1.97785
1.55	.7174-4	.3162-8	.8199-1	.1483	.7973-2	.9938-2	.9886	1.97788
1.56	.7143-4	.3153-8	.8195-1	.1482	.7952-2	.9907-2	.9886	1.97792
1.57	.7113-4	.3145-8	.8192-1	.1481	.7935-2	.9883-2	.9886	1.97796
1.58	.7083-4	.3137-8	.8188-1	.1479	.7915-2	.9858-2	.9886	1.97800
1.59	.7053-4	.3129-8	.8185-1	.1478	.7890-2	.9833-2	.9886	1.97803
1.60	.7024-4	.3121-8	.8181-1	.1477	.7876-2	.9806-2	.9890	1.97807
1.61	.6994-4	.3113-8	.8177-1	.1476	.7853-2	.9784-2	.9891	1.97811
1.62	.6963-4	.3104-8	.8174-1	.1474	.7831-2	.9759-2	.9891	1.97815
1.63	.6936-4	.3095-8	.8170-1	.1473	.7817-2	.9735-2	.9891	1.97818
1.64	.6907-4	.3086-8	.8166-1	.1472	.7798-2	.9710-2	.9891	1.97822
1.65	.6887-4	.3078-8	.8163-1	.1471	.7779-2	.9686-2	.9891	1.97826
1.66	.6864-4	.3072-8	.8159-1	.1469	.7759-2	.9666-2	.9891	1.97829
1.67	.6842-4	.3064-8	.8155-1	.1468	.7740-2	.9638-2	.9892	1.97833
1.68	.6820-4	.3056-8	.8150-1	.1467	.7721-2	.9614-2	.9892	1.97837
1.69	.6796-4	.3048-8	.8146-1	.1466	.7702-2	.9590-2	.9892	1.97840
1.70	.6735-4	.3141-8	.8145-1	.1464	.7683-2	.9566-2	.9892	1.97844
1.71	.6707-4	.3133-8	.8141-1	.1463	.7664-2	.9542-2	.9892	1.97847
1.72	.6679-4	.3125-8	.8137-1	.1462	.7645-2	.9519-2	.9893	1.97851
1.73	.6651-4	.3117-8	.8133-1	.1461	.7626-2	.9495-2	.9893	1.97855
1.74	.6623-4	.3109-8	.8129-1	.1460	.7607-2	.9471-2	.9893	1.97859
1.75	.6595-4	.3101-8	.8125-1	.1459	.7588-2	.9448-2	.9893	1.97863
1.76	.6568-4	.3093-8	.8121-1	.1458	.7570-2	.9425-2	.9893	1.97867
1.77	.6541-4	.3085-8	.8116-1	.1456	.7551-2	.9401-2	.9893	1.97869
1.78	.6514-4	.3078-8	.8112-1	.1455	.7532-2	.9378-2	.9893	1.97873
1.79	.6487-4	.3071-8	.8108-1	.1453	.7514-2	.9355-2	.9894	1.97876
1.80	.6460-4	.3063-8	.8109-1	.1452	.7496-2	.9338-2	.9894	1.97880
1.81	.6434-4	.3055-8	.8105-1	.1451	.7478-2	.9309-2	.9894	1.97883
1.82	.6407-4	.3048-8	.8101-1	.1450	.7459-2	.9286-2	.9894	1.97887
1.83	.6380-4	.3040-8	.8097-1	.1449	.7441-2	.9263-2	.9895	1.97890
1.84	.6353-4	.3032-8	.8093-1	.1448	.7422-2	.9240-2	.9895	1.97894
1.85	.6326-4	.3025-8	.8089-1	.1446	.7403-2	.9217-2	.9895	1.97897
1.86	.6302-4	.3018-8	.8085-1	.1445	.7384-2	.9195-2	.9895	1.97901
1.87	.6276-4	.3010-8	.8081-1	.1444	.7365-2	.9172-2	.9895	1.97904
1.88	.6250-4	.3003-8	.8078-1	.1443	.7346-2	.9150-2	.9895	1.97908
1.89	.6224-4	.2995-8	.8074-1	.1442	.7327-2	.9127-2	.9896	1.97911
1.90	.6199-4	.2988-8	.8075-1	.1440	.7315-2	.9105-2	.9896	1.97915
1.91	.6173-4	.2981-8	.8071-1	.1439	.7297-2	.9083-2	.9896	1.97918
1.92	.6146-4	.2973-8	.8067-1	.1437	.7282-2	.9063-2	.9896	1.97922
1.93	.6120-4	.2965-8	.8063-1	.1436	.7262-2	.9043-2	.9896	1.97925
1.94	.6096-4	.2957-8	.8059-1	.1434	.7243-2	.9024-2	.9896	1.97928
1.95	.6073-4	.2951-8	.8055-1	.1433	.7224-2	.9004-2	.9896	1.97931
1.96	.6048-4	.2944-8	.8051-1	.1432	.7205-2	.8985-2	.9897	1.97935
1.97	.6023-4	.2937-8	.8047-1	.1431	.7186-2	.8965-2	.9897	1.97939
1.98	.5999-4	.2930-8	.8044-1	.1430	.7167-2	.8946-2	.9897	1.97943
1.99	.5974-4	.2933-8	.8041-1	.1429	.7148-2	.8927-2	.9897	1.97945

## FUNDAMENTAL FLOW EQUATIONS

$\frac{M}{M}$	$\frac{V}{V}$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
5.216	74.522	-4531	51.0	3.003	38.69	.1622-1	178.2	11.00
5.211	74.534	-4531	51.3	3.003	38.75	.1618-1	178.5	11.01
5.006	74.550	-4531	51.8	3.004	38.82	.1614-1	178.8	11.03
5.202	74.577	-4531	52.1	3.004	38.90	.1609-1	179.1	11.05
5.197	74.591	-4530	52.4	3.004	38.96	.1605-1	179.5	11.04
5.188	74.605	-4530	52.7	3.004	39.10	.1597-1	180.1	11.06
5.178	74.618	-4530	53.0	3.004	39.17	.1593-1	180.4	11.07
5.173	74.632	-4530	53.3	3.005	39.24	.1589-1	180.8	11.08
5.173	74.646	-4530	53.5	3.005	39.31	.1584-1	181.1	11.09
5.169	74.659	-4530	53.8	3.005	39.38	.1580-1	181.4	11.10
5.164	74.673	-4530	54.0	3.005	39.45	.1575-1	181.7	11.11
5.159	74.686	-4530	54.3	3.005	39.52	.1578-1	182.1	11.12
5.155	74.700	-4530	54.6	3.005	39.59	.1568-1	182.4	11.13
5.150	74.713	-4530	54.9	3.006	39.65	.1564-1	182.7	11.14
5.146	74.727	-4529	55.2	3.006	39.72	.1560-1	183.1	11.15
5.141	74.740	-4529	55.4	3.006	39.79	.1558-1	183.4	11.16
5.136	74.754	-4529	55.7	3.006	39.86	.1554-1	183.7	11.17
5.132	74.757	-4529	56.0	3.006	39.93	.1558-1	184.0	11.18
5.127	74.760	-4529	56.3	4.000	40.00	.1554-1	184.4	11.19
5.123	74.774	-4529	56.6	3.006	40.07	.1540-1	184.7	11.20
5.118	74.807	-4529	56.8	3.007	40.14	.1536-1	185.0	11.21
5.113	74.820	-4529	57.1	3.007	40.21	.1532-1	185.4	11.22
5.109	74.834	-4529	57.4	3.007	40.28	.1528-1	185.7	11.23
5.104	74.847	-4529	57.7	3.007	40.35	.1524-1	186.0	11.24
5.100	74.860	-4528	58.0	3.007	40.42	.1520-1	186.3	11.25
5.095	74.873	-4528	58.3	3.008	40.49	.1516-1	186.7	11.26
5.086	74.886	-4528	58.6	3.008	40.57	.1512-1	187.0	11.27
5.082	74.900	-4528	58.8	3.008	40.64	.1509-1	187.3	11.28
5.072	74.913	-4528	59.1	3.008	40.71	.1505-1	187.7	11.29
5.077	74.926	-4528	59.4	3.008	40.78	.1501-1	188.0	11.30
5.073	74.939	-4528	59.6	3.008	40.85	.1497-1	188.3	11.31
5.068	74.952	-4528	59.9	3.008	40.92	.1493-1	188.7	11.32
5.064	74.965	-4528	60.2	3.008	40.99	.1489-1	189.0	11.33
5.059	74.978	-4528	60.5	3.008	41.06	.1485-1	189.3	11.34
5.055	74.981	-4527	60.8	3.009	41.13	.1482-1	189.6	11.35
5.050	75.004	-4527	61.1	3.009	41.20	.1478-1	190.0	11.36
5.046	75.037	-4527	61.4	3.009	41.27	.1474-1	190.3	11.37
5.041	75.050	-4527	61.6	3.009	41.34	.1471-1	190.7	11.38
5.037	75.043	-4527	61.9	3.010	41.41	.1467-1	191.0	11.39
5.032	75.056	-4527	62.0	3.010	41.49	.1463-1	191.3	11.40
5.028	75.059	-4527	62.3	3.010	41.56	.1459-1	191.7	11.41
5.024	75.081	-4527	62.6	3.010	41.63	.1456-1	192.0	11.42
5.019	75.094	-4527	63.0	3.010	41.70	.1452-1	192.3	11.43
5.015	75.107	-4527	63.3	3.010	41.77	.1448-1	192.7	11.44
5.010	75.120	-4526	63.6	3.010	41.84	.1445-1	193.0	11.45
5.006	75.133	-4526	63.9	3.011	41.91	.1441-1	193.3	11.46
5.002	75.145	-4526	64.2	3.011	41.99	.1437-1	193.7	11.47
4.997	75.158	-4526	64.5	3.011	42.06	.1434-1	194.0	11.48
4.993	75.171	-4526	64.8	3.011	42.13	.1430-1	194.4	11.49
4.989	75.183	-4526	65.1	3.011	42.20	.1427-1	194.7	11.50
4.984	75.196	-4526	65.4	3.011	42.27	.1423-1	195.0	11.51
4.980	75.209	-4526	65.6	3.011	42.35	.1420-1	195.4	11.52
4.976	75.221	-4526	65.9	3.012	42.42	.1416-1	195.7	11.53
4.971	75.234	-4526	66.2	3.012	42.49	.1412-1	196.1	11.54
4.967	75.246	-4526	66.5	3.012	42.56	.1409-1	196.4	11.55
4.963	75.259	-4526	66.8	3.012	42.63	.1405-1	196.7	11.56
4.958	75.271	-4526	67.1	3.012	42.70	.1402-1	197.1	11.57
4.954	75.283	-4526	67.4	3.012	42.78	.1408-1	197.4	11.58
4.950	75.296	-4526	67.7	3.012	42.85	.1395-1	197.8	11.59
4.945	75.309	-4525	68.0	3.013	42.92	.1391-1	198.1	11.60
4.941	75.321	-4525	68.2	3.013	43.00	.1388-1	198.4	11.61
4.937	75.334	-4525	68.5	3.013	43.07	.1385-1	198.8	11.62
4.933	75.346	-4525	68.8	3.013	43.14	.1382-1	199.1	11.63
4.928	75.359	-4525	69.1	3.013	43.21	.1379-1	199.5	11.64
4.924	75.371	-4525	69.4	3.013	43.29	.1376-1	199.8	11.65
4.920	75.383	-4525	69.7	3.013	43.36	.1372-1	200.1	11.66
4.916	75.396	-4524	70.0	3.014	43.43	.1368-1	200.5	11.67
4.911	75.408	-4524	70.3	3.014	43.51	.1364-1	200.8	11.68
4.907	75.420	-4524	70.6	3.014	43.58	.1361-1	201.2	11.69
4.903	75.432	-4524	70.9	3.014	43.65	.1357-1	201.5	11.70
4.899	75.445	-4524	71.2	3.014	43.72	.1354-1	201.9	11.71
4.895	75.457	-4524	71.5	3.014	43.80	.1350-1	202.2	11.72
4.890	75.469	-4524	71.7	3.014	43.87	.1347-1	202.5	11.73
4.886	75.481	-4524	72.0	3.014	43.94	.1344-1	202.9	11.74
4.882	75.493	-4524	72.3	3.014	44.02	.1341-1	203.2	11.75
4.878	75.505	-4524	72.6	3.014	44.09	.1337-1	203.6	11.76
4.874	75.516	-4524	72.9	3.014	44.17	.1334-1	203.9	11.77
4.870	75.530	-4524	73.2	3.014	44.24	.1331-1	204.3	11.78
4.866	75.542	-4524	73.5	3.014	44.31	.1327-1	204.6	11.79
4.861	75.554	-4523	73.8	3.015	44.39	.1324-1	205.0	11.80
4.857	75.566	-4523	74.1	3.015	44.46	.1321-1	205.3	11.81
4.853	75.578	-4523	74.4	3.015	44.53	.1318-1	205.7	11.82
4.849	75.590	-4523	74.7	3.015	44.61	.1314-1	206.0	11.83
4.845	75.602	-4523	75.0	3.015	44.68	.1311-1	206.4	11.84
4.837	75.614	-4523	75.3	3.015	44.76	.1308-1	206.7	11.85
4.833	75.626	-4523	75.6	3.015	44.83	.1305-1	207.1	11.86
4.829	75.640	-4523	76.0	3.015	44.90	.1302-1	207.4	11.87
4.825	75.661	-4523	76.5	3.015	44.98	.1298-1	207.7	11.88
4.820	75.673	-4522	76.8	3.017	45.05	.1295-1	208.1	11.89
4.816	75.685	-4522	77.1	3.017	45.12	.1289-1	208.4	11.91
4.812	75.697	-4522	77.4	3.017	45.20	.1286-1	208.7	11.92
4.808	75.709	-4522	77.7	3.017	45.28	.1283-1	209.1	11.93
4.804	75.720	-4522	78.0	3.017	45.35	.1280-1	209.5	11.94
4.799	75.732	-4522	78.3	3.018	45.43	.1277-1	210.2	11.95
4.794	75.744	-4522	78.6	3.018	45.50	.1274-1	210.6	11.96
4.792	75.756	-4522	78.9	3.018	45.57	.1271-1	210.9	11.97
4.788	75.767	-4522	79.2	3.018	45.65	.1268-1	211.3	11.98
4.784	75.779	-4522	79.5	3.018	45.72	.1265-1	211.6	11.99

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/p <sub>t</sub>	T/T <sub>t</sub>	s/s <sub>t</sub>	q/p <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/v <sup>*</sup>
1.8 .00	.5 9 5 0 -4	.2 9 1 5 -2	.2 0 4 1 -1	.1 4 8 9	.7 1 4 0 -2	.8 8 8 5 -2	.9 8 9 7	1.9 7 9 4 9
1.8 .01	.5 9 5 0 -4	.2 9 1 5 -2	.2 0 5 7 -1	.1 4 8 7	.7 1 2 3 -2	.8 8 6 4 -2	.9 8 9 8	1.9 7 9 5 8
1.8 .02	.5 9 5 0 -4	.2 9 1 5 -2	.2 0 6 1 -1	.1 4 8 6	.7 1 0 6 -2	.8 8 5 4 -2	.9 8 9 8	1.9 7 9 5 5
1.8 .03	.5 9 5 0 -4	.2 9 1 5 -2	.2 0 6 3 -1	.1 4 8 5	.7 0 8 8 -2	.8 8 4 4 -2	.9 8 9 8	1.9 7 9 5 2
1.8 .04	.5 9 5 4 -4	.2 8 9 7 -2	.2 0 2 8 -1	.1 4 2 4	.7 0 7 6 -2	.8 7 6 9 -2	.9 8 9 8	1.9 7 9 5 0
1.8 .05	.5 9 5 4 -4	.2 8 9 7 -2	.2 0 2 8 -1	.1 4 2 3	.7 0 5 4 -2	.8 7 7 3 -2	.9 8 9 8	1.9 7 9 4 8
1.8 .06	.5 9 5 4 -4	.2 8 9 7 -2	.2 0 2 8 -1	.1 4 2 2	.7 0 3 1 -2	.8 7 7 5 -2	.9 8 9 8	1.9 7 9 4 6
1.8 .07	.5 9 5 4 -4	.2 8 9 7 -2	.2 0 1 8 -1	.1 4 2 0	.7 0 0 4 -2	.8 7 7 7 -2	.9 8 9 9	1.9 7 9 4 5
1.8 .08	.5 9 5 4 -4	.2 8 9 7 -2	.2 0 1 4 -1	.1 4 1 9	.6 9 8 7 -2	.8 6 9 3 -2	.9 8 9 9	1.9 7 9 4 4
1.8 .09	.5 9 5 4 -4	.2 8 9 7 -2	.2 0 1 1 -1	.1 4 1 8	.6 9 8 7 -2	.8 6 9 3 -2	.9 8 9 9	1.9 7 9 4 3
1.9 .1 0	.5 7 9 3 -4	.2 8 0 5 -2	.2 0 0 8 -1	.1 4 1 7	.6 9 7 0 -2	.8 6 7 3 -2	.9 8 9 9	1.9 7 9 4 2
1.9 .1 1	.5 6 9 0 -4	.2 8 0 5 -2	.2 0 0 1 -1	.1 4 1 6	.6 9 5 3 -2	.8 6 6 1 -2	.9 8 9 9	1.9 7 9 4 1
1.9 .1 2	.5 6 6 7 -4	.2 8 0 5 -2	.2 0 0 1 -1	.1 4 1 5	.6 9 3 7 -2	.8 6 5 1 -2	.9 8 9 9	1.9 7 9 4 0
1.9 .1 3	.5 6 6 4 -4	.2 8 0 5 -2	.2 0 2 5 -1	.1 4 1 4	.6 9 2 0 -2	.8 6 4 0 -2	.9 8 9 9	1.9 7 9 3 9
1.9 .1 4	.5 6 6 4 -4	.2 8 0 5 -2	.2 0 1 8 -1	.1 4 1 3	.6 9 0 4 -2	.8 6 3 9 -2	.9 8 9 9	1.9 7 9 3 8
1.9 .1 5	.5 5 9 9 -4	.2 8 0 5 -2	.2 0 0 1 -1	.1 4 1 1	.6 8 8 7 -2	.8 5 5 9 -2	.9 9 0 0	1.9 7 9 3 7
1.9 .1 6	.5 5 7 6 -4	.2 8 0 5 -2	.2 0 0 4 -1	.1 4 1 0	.6 8 7 1 -2	.8 5 5 8 -2	.9 9 0 0	1.9 8 0 0 1
1.9 .1 7	.5 5 5 2 -4	.2 8 0 5 -2	.2 0 0 1 -1	.1 4 0 9	.6 8 5 5 -2	.8 5 5 7 -2	.9 9 0 0	1.9 8 0 0 0
1.9 .1 8	.5 5 5 2 -4	.2 8 0 5 -2	.2 0 1 1 -1	.1 4 0 8	.6 8 3 0 -2	.8 5 5 6 -2	.9 9 0 0	1.9 8 0 0 0
1.9 .1 9	.5 5 5 2 -4	.2 8 0 5 -2	.2 0 0 9 -1	.1 4 0 7	.6 8 2 2 -2	.8 5 5 5 -2	.9 9 0 1	1.9 8 0 0 1
1.9 .2 0	.5 4 8 7 -4	.2 7 7 7 -2	.2 9 7 6 -1	.1 4 0 6	.6 8 0 6 -2	.8 4 6 7 -2	.9 9 0 1	1.9 8 0 1 4
1.9 .2 1	.5 4 6 5 -4	.2 7 6 4 -2	.2 9 7 3 -1	.1 4 0 4	.6 7 9 0 -2	.8 4 6 6 -2	.9 9 0 1	1.9 8 0 1 3
1.9 .2 2	.5 4 4 3 -4	.2 7 6 4 -2	.2 9 6 9 -1	.1 4 0 3	.6 7 7 3 -2	.8 4 6 5 -2	.9 9 0 1	1.9 8 0 1 2
1.9 .2 3	.5 4 2 1 -4	.2 7 6 4 -2	.2 9 6 6 -1	.1 4 0 2	.6 7 5 7 -2	.8 4 6 4 -2	.9 9 0 1	1.9 8 0 1 1
1.9 .2 4	.5 4 0 0 -4	.2 7 5 1 -2	.2 9 6 3 -1	.1 4 0 1	.6 7 4 1 -2	.8 3 8 6 -2	.9 9 0 2	1.9 8 0 1 0
1.9 .2 5	.5 3 7 9 -4	.2 7 5 1 -2	.2 9 6 0 -1	.1 4 0 0	.6 7 2 5 -2	.8 3 8 5 -2	.9 9 0 2	1.9 8 0 0 9
1.9 .2 6	.5 3 5 7 -4	.2 7 5 1 -2	.2 9 5 7 -1	.1 3 9 9	.6 7 0 9 -2	.8 3 8 4 -2	.9 9 0 2	1.9 8 0 0 8
1.9 .2 7	.5 3 3 5 -4	.2 7 5 1 -2	.2 9 5 4 -1	.1 3 9 8	.6 6 9 4 -2	.8 3 8 3 -2	.9 9 0 2	1.9 8 0 0 7
1.9 .2 8	.5 3 1 4 -4	.2 7 5 1 -2	.2 9 5 1 -1	.1 3 9 7	.6 6 7 8 -2	.8 3 8 2 -2	.9 9 0 2	1.9 8 0 0 6
1.9 .2 9	.5 3 0 3 -4	.2 7 5 1 -2	.2 9 4 7 -1	.1 3 9 6	.6 6 6 2 -2	.8 3 8 1 -2	.9 9 0 2	1.9 8 0 0 5
1.9 .3 0	.5 2 7 8 -4	.2 7 1 1 -2	.1 9 4 4 -1	.1 3 9 4	.6 6 4 6 -2	.8 2 6 7 -2	.9 9 0 2	1.9 8 0 4 6
1.9 .3 1	.5 2 5 6 -4	.2 7 0 5 -2	.1 9 4 1 -1	.1 3 9 3	.6 6 3 1 -2	.8 2 6 6 -2	.9 9 0 2	1.9 8 0 4 5
1.9 .3 2	.5 2 3 4 -4	.2 7 0 5 -2	.1 9 3 8 -1	.1 3 9 2	.6 6 2 0 -2	.8 2 6 5 -2	.9 9 0 2	1.9 8 0 4 4
1.9 .3 3	.5 2 1 2 -4	.2 7 0 5 -2	.1 9 3 5 -1	.1 3 9 1	.6 6 0 9 -2	.8 2 6 4 -2	.9 9 0 2	1.9 8 0 4 3
1.9 .3 4	.5 1 6 8 -4	.2 7 0 2 -2	.1 9 2 9 -1	.1 3 8 9	.6 5 6 9 -2	.8 1 7 0 -2	.9 9 0 3	1.9 8 0 4 2
1.9 .3 5	.5 1 4 6 -4	.2 7 0 2 -2	.1 9 2 6 -1	.1 3 7 9	.6 5 5 3 -2	.8 1 6 9 -2	.9 9 0 3	1.9 8 0 4 1
1.9 .3 6	.5 1 2 4 -4	.2 7 0 2 -2	.1 9 2 3 -1	.1 3 7 8	.6 5 3 8 -2	.8 1 6 8 -2	.9 9 0 3	1.9 8 0 4 0
1.9 .3 7	.5 1 0 2 -4	.2 7 0 2 -2	.1 9 2 0 -1	.1 3 7 7	.6 5 2 3 -2	.8 1 6 7 -2	.9 9 0 4	1.9 8 0 3 9
1.9 .3 8	.5 0 8 7 -4	.2 6 5 4 -2	.1 9 1 7 -1	.1 3 7 6	.6 5 0 7 -2	.8 0 3 3 -2	.9 9 0 4	1.9 8 0 3 8
1.9 .3 9	.5 0 7 7 -4	.2 6 5 4 -2	.1 9 1 7 -1	.1 3 7 5	.6 4 9 3 -2	.7 9 7 5 -2	.9 9 0 4	1.9 8 0 3 7
1.9 .4 0	.5 0 6 7 -4	.2 6 5 7 -2	.1 9 1 4 -1	.1 3 7 3	.6 4 9 2 -2	.8 0 5 2 -2	.9 9 0 4	1.9 8 0 3 6
1.9 .4 1	.5 0 4 7 -4	.2 6 4 1 -2	.1 9 0 8 -1	.1 3 7 2	.6 4 6 2 -2	.8 0 5 1 -2	.9 9 0 4	1.9 8 0 3 5
1.9 .4 2	.5 0 2 7 -4	.2 6 4 1 -2	.1 9 0 5 -1	.1 3 7 1	.6 4 4 7 -2	.8 0 4 7 -2	.9 9 0 4	1.9 8 0 3 4
1.9 .4 3	.5 0 0 7 -4	.2 6 2 9 -2	.1 9 0 2 -1	.1 3 7 0	.6 4 3 2 -2	.7 9 9 8 -2	.9 9 0 4	1.9 8 0 3 3
1.9 .4 4	.4 9 8 7 -4	.2 6 2 6 -2	.1 8 9 9 -1	.1 3 7 9	.6 4 1 7 -2	.7 9 7 9 -2	.9 9 0 5	1.9 8 0 3 2
1.9 .4 5	.4 9 6 6 -4	.2 6 2 6 -2	.1 8 9 6 -1	.1 3 7 8	.6 4 0 2 -2	.7 9 6 1 -2	.9 9 0 5	1.9 8 0 3 1
1.9 .4 6	.4 9 4 5 -4	.2 6 2 6 -2	.1 8 9 3 -1	.1 3 7 7	.6 3 8 7 -2	.7 9 4 2 -2	.9 9 0 5	1.9 8 0 3 0
1.9 .4 7	.4 9 2 4 -4	.2 6 2 6 -2	.1 8 9 0 -1	.1 3 7 6	.6 3 7 2 -2	.7 9 2 3 -2	.9 9 0 5	1.9 8 0 2 9
1.9 .4 8	.4 9 0 3 -4	.2 6 2 6 -2	.1 8 8 7 -1	.1 3 7 5	.6 3 5 7 -2	.7 9 0 4 -2	.9 9 0 5	1.9 8 0 2 8
1.9 .4 9	.4 8 8 0 -4	.2 6 2 6 -2	.1 8 8 4 -1	.1 3 7 4	.6 3 4 2 -2	.7 8 8 5 -2	.9 9 0 5	1.9 8 0 2 7
1.9 .5 0	.4 8 7 1 -4	.2 6 8 6 -2	.1 8 8 4 -1	.1 3 7 3	.6 3 4 2 -2	.7 8 6 6 -2	.9 9 0 5	1.9 8 0 2 6
1.9 .5 1	.4 8 5 2 -4	.2 6 7 3 -2	.1 8 8 1 -1	.1 3 7 1	.6 3 2 8 -2	.7 8 4 9 -2	.9 9 0 6	1.9 8 0 2 5
1.9 .5 2	.4 8 3 3 -4	.2 6 7 3 -2	.1 8 7 8 -1	.1 3 7 0	.6 3 1 3 -2	.7 8 3 1 -2	.9 9 0 6	1.9 8 0 2 4
1.9 .5 3	.4 8 1 4 -4	.2 6 7 3 -2	.1 8 7 5 -1	.1 3 6 9	.6 2 9 8 -2	.7 8 2 1 -2	.9 9 0 6	1.9 8 0 2 3
1.9 .5 4	.4 7 9 5 -4	.2 6 6 1 -2	.1 8 7 2 -1	.1 3 6 8	.6 2 8 4 -2	.7 8 1 3 -2	.9 9 0 6	1.9 8 0 2 2
1.9 .5 5	.4 7 7 4 -4	.2 6 6 1 -2	.1 8 6 9 -1	.1 3 6 7	.6 2 6 9 -2	.7 7 9 5 -2	.9 9 0 6	1.9 8 0 2 1
1.9 .5 6	.4 7 5 3 -4	.2 6 6 1 -2	.1 8 6 6 -1	.1 3 6 6	.6 2 5 4 -2	.7 7 7 6 -2	.9 9 0 6	1.9 8 0 2 0
1.9 .5 7	.4 7 3 2 -4	.2 6 6 1 -2	.1 8 6 3 -1	.1 3 6 5	.6 2 4 0 -2	.7 7 5 7 -2	.9 9 0 6	1.9 8 0 1 9
1.9 .5 8	.4 7 2 1 -4	.2 6 3 8 -2	.1 8 6 0 -1	.1 3 6 4	.6 2 2 6 -2	.7 7 3 8 -2	.9 9 0 6	1.9 8 0 1 8
1.9 .5 9	.4 7 0 2 -4	.2 6 3 8 -2	.1 8 5 7 -1	.1 3 6 3	.6 2 1 1 -2	.7 7 2 2 -2	.9 9 0 7	1.9 8 0 1 7
1.9 .6 0	.4 6 8 4 -4	.2 5 2 6 -2	.1 8 5 5 -1	.1 3 6 2	.6 1 9 7 -2	.7 7 0 5 -2	.9 9 0 7	1.9 8 0 1 6
1.9 .6 1	.4 6 6 5 -4	.2 5 2 0 -2	.1 8 5 2 -1	.1 3 6 1	.6 1 8 3 -2	.7 6 8 7 -2	.9 9 0 7	1.9 8 0 1 4
1.9 .6 2	.4 6 4 5 -4	.2 5 0 8 -2	.1 8 4 9 -1	.1 3 6 0	.6 1 6 9 -2	.7 6 6 9 -2	.9 9 0 7	1.9 8 0 1 3
1.9 .6 3	.4 6 3 4 -4	.2 5 0 8 -2	.1 8 4 6 -1	.1 3 5 9	.6 1 5 4 -2	.7 6 5 1 -2	.9 9 0 7	1.9 8 0 1 2
1.9 .6 4	.4 6 2 3 -4	.2 5 0 8 -2	.1 8 4 3 -1	.1 3 5 8	.6 1 4 0 -2	.7 6 3 2 -2	.9 9 0 7	1.9 8 0 1 1
1.9 .6 5	.4 5 9 4 -4	.2 4 9 5 -2	.1 8 4 0 -1	.1 3 5 7	.6 1 2 6 -2	.7 6 1 3 -2	.9 9 0 6	1.9 8 0 1 0
1.9 .6 6	.4 5 7 6 -4	.2 4 9 5 -2	.1 8 3 7 -1	.1 3 5 6	.6 1 1 3 -2	.7 5 9 0 -2	.9 9 0 6	1.9 8 0 0 9
1.9 .6 7	.4 5 5 6 -4	.2 4 9 5 -2	.1 8 3 4 -1	.1 3 5 5	.6 1 0 8 -2	.7 5 7 0 -2	.9 9 0 6	1.9 8 0 0 8
1.9 .6 8	.4 5 3 5 -4	.2 4 7 9 -2	.1 8 3 1 -1	.1 3 5 4	.6 0 9 8 -2	.7 5 5 0 -2	.9 9 0 6	1.9 8 0 0 7
1.9 .6 9	.4 5 1 4 -4	.2 4 7 9 -2	.1 8 2 8 -1	.1 3 5 3	.6 0 8 7 -2	.7 5 3 0 -2	.9 9 0 6	1.9 8 0 0 6
1.9 .7 0	.4 5 0 6 -4	.2 4 6 6 -2	.1 8 2 5 -1	.1 3 5 2	.6 0 7 6 -2	.7 5 1 0 -2	.9 9 0 6	1.9 8 0 0 5
1.9 .7 1	.4 4 8 6 -4	.2 4 6 6 -2	.1 8 2 2 -1	.1 3 5 1	.6 0 6 5 -2	.7 4 9 1 -2	.9 9 0 6	1.9 8 0 0 4
1.9 .7 2	.4 4 6 5 -4	.2 4 6 6 -2	.1 8 1 9 -1	.1 3 5 0	.6 0 5 4 -2	.7 4 7 2 -2	.9 9 0 6	1.9 8 0 0 3
1.9 .7 3	.4 4 4 5 -4	.2 4 5 0 -2	.1 8 1 6 -1	.1 3 4 9	.6 0 4 3 -2	.7 4 5 3 -2	.9 9 0 6	1.9 8 0 0 2
1.9 .7 4	.4 4 2 4 -4	.2 4 4 5 -2	.1 8 1 3 -1	.1 3 4 8	.6 0 3 2 -2	.7 4 3 4 -2	.9 9 0 6	1.9 8 0 0 1
1.9 .7 5	.4 4 0 3 -4	.2 4 3 9 -2	.1 8 1 0 -1	.1 3 4 7	.6 0 2 1 -2	.7 4 1 5 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .7 6	.4 3 8 5 -4	.2 4 3 9 -2	.1 8 0 7 -1	.1 3 4 6	.5 9 9 8 -2	.7 4 0 5 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .7 7	.4 3 6 4 -4	.2 4 3 9 -2	.1 8 0 4 -1	.1 3 4 5	.5 9 7 4 -2	.7 3 9 5 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .7 8	.4 3 4 3 -4	.2 4 3 9 -2	.1 8 0 1 -1	.1 3 4 4	.5 9 5 6 -2	.7 3 8 5 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .7 9	.4 3 2 2 -4	.2 4 3 6 -2	.1 7 9 8 -1	.1 3 4 3	.5 9 4 5 -2	.7 3 7 4 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 0	.4 3 0 1 -4	.2 4 3 6 -2	.1 7 9 5 -1	.1 3 4 2	.5 9 3 4 -2	.7 3 6 4 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 1	.4 2 8 0 -4	.2 4 3 6 -2	.1 7 9 2 -1	.1 3 4 1	.5 9 2 3 -2	.7 3 5 3 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 2	.4 2 5 9 -4	.2 4 3 6 -2	.1 7 8 9 -1	.1 3 4 0	.5 9 1 2 -2	.7 3 4 2 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 3	.4 2 3 8 -4	.2 4 3 6 -2	.1 7 8 6 -1	.1 3 3 9	.5 8 9 1 -2	.7 3 3 1 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 4	.4 2 1 7 -4	.2 4 3 6 -2	.1 7 8 3 -1	.1 3 3 8	.5 8 7 0 -2	.7 3 2 0 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 5	.4 1 9 6 -4	.2 4 3 6 -2	.1 7 8 0 -1	.1 3 3 7	.5 8 4 9 -2	.7 3 0 9 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 6	.4 1 7 5 -4	.2 4 3 6 -2	.1 7 7 7 -1	.1 3 3 6	.5 8 2 8 -2	.7 3 0 8 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 7	.4 1 5 4 -4	.2 4 3 6 -2	.1 7 7 4 -1	.1 3 3 5	.5 8 0 7 -2	.7 3 0 7 -2	.9 9 0 6	1.9 8 0 0 0
1.9 .8 8</td								

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\nu$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
4.780	75.791	.4520	1.79 .8	.918	.905	.1261 -1	.212 .0	12.00
4.776	75.802	.4520	1.80 .1	.919	.905	.1258 -1	.212 .3	12.01
4.772	75.814	.4520	1.80 .4	.919	.905	.1255 -1	.212 .7	12.01
4.768	75.826	.4520	1.80 .7	.919	.910	.1250 -1	.213 .0	12.01
4.764	75.837	.4520	1.81 .0	.919	.917	.1249 -1	.213 .4	12.04
4.760	75.849	.4520	1.81 .3	.919	.925	.1246 -1	.213 .7	12.05
4.756	75.860	.4520	1.81 .6	.919	.932	.1243 -1	.214 .1	12.06
4.752	75.872	.4520	1.81 .9	.919	.940	.1240 -1	.214 .4	12.07
4.748	75.883	.4520	1.82 .2	.919	.948	.1237 -1	.214 .8	12.08
4.745	75.895	.4520	1.82 .5	.920	.955	.1234 -1	.215 .1	12.09
4.741	75.906	.4520	1.82 .8	.920	.963	.1231 -1	.215 .5	12.10
4.737	75.918	.4520	1.83 .1	.920	.970	.1228 -1	.215 .9	12.11
4.733	75.929	.4520	1.83 .4	.920	.978	.1225 -1	.216 .2	12.12
4.729	75.941	.4520	1.83 .7	.920	.985	.1222 -1	.216 .6	12.13
4.725	75.953	.4520	1.84 .0	.920	.993	.1219 -1	.216 .9	12.14
4.721	75.963	.4520	1.84 .3	.920	.991	.1216 -1	.217 .3	12.15
4.717	75.975	.4520	1.84 .6	.921	.998	.1214 -1	.217 .6	12.16
4.713	75.986	.4520	1.84 .9	.921	.997	.1211 -1	.218 .0	12.17
4.709	75.997	.4520	1.85 .2	.921	.995	.1208 -1	.218 .4	12.18
4.706	76.009	.4520	1.85 .5	.921	.997	.1205 -1	.218 .7	12.19
4.702	76.020	.4520	1.85 .8	.921	.979	.1202 -1	.219 .1	12.20
4.698	76.031	.4520	1.86 .1	.921	.946	.1199 -1	.219 .5	12.21
4.694	76.043	.4520	1.86 .4	.921	.954	.1196 -1	.219 .8	12.22
4.690	76.054	.4520	1.86 .7	.921	.962	.1193 -1	.220 .1	12.23
4.686	76.065	.4520	1.87 .0	.921	.969	.1191 -1	.220 .5	12.24
4.682	76.076	.4520	1.87 .3	.922	.977	.1188 -1	.220 .9	12.25
4.679	76.087	.4520	1.87 .6	.922	.984	.1185 -1	.221 .2	12.26
4.675	76.099	.4520	1.88 .0	.922	.971	.1182 -1	.221 .6	12.27
4.671	76.110	.4519	1.88 .2	.922	.960	.1179 -1	.221 .9	12.28
4.667	76.121	.4519	1.88 .6	.922	.908	.1177 -1	.222 .3	12.29
4.663	76.132	.4519	1.88 .9	.922	.815	.1174 -1	.222 .7	12.30
4.660	76.143	.4519	1.89 .2	.922	.823	.1171 -1	.223 .0	12.31
4.656	76.154	.4519	1.89 .5	.922	.831	.1168 -1	.223 .4	12.32
4.650	76.165	.4519	1.89 .8	.922	.838	.1166 -1	.224 .1	12.33
4.648	76.176	.4519	1.90 .1	.923	.846	.1163 -1	.224 .5	12.34
4.645	76.187	.4519	1.90 .4	.923	.853	.1160 -1	.224 .8	12.35
4.641	76.198	.4519	1.90 .7	.923	.861	.1157 -1	.224 .8	12.36
4.637	76.209	.4519	1.91 .0	.923	.869	.1155 -1	.225 .2	12.37
4.633	76.220	.4519	1.91 .3	.923	.877	.1152 -1	.225 .6	12.38
4.629	76.231	.4519	1.91 .6	.923	.885	.1149 -1	.225 .9	12.39
4.626	76.242	.4518	1.92 .0	.923	.92	.1147 -1	.226 .3	12.40
4.622	76.253	.4518	1.92 .3	.923	.909	.1144 -1	.227 .0	12.41
4.618	76.264	.4518	1.92 .6	.924	.916	.1141 -1	.227 .4	12.42
4.614	76.275	.4518	1.92 .9	.924	.923	.1139 -1	.227 .8	12.43
4.611	76.286	.4518	1.93 .2	.924	.930	.1136 -1	.227 .8	12.44
4.607	76.297	.4518	1.93 .5	.924	.931	.1133 -1	.228 .1	12.45
4.603	76.307	.4518	1.93 .8	.924	.939	.1131 -1	.228 .5	12.46
4.600	76.318	.4518	1.94 .1	.924	.947	.1128 -1	.228 .9	12.47
4.599	76.329	.4518	1.94 .4	.924	.955	.1125 -1	.229 .2	12.48
4.592	76.340	.4518	1.94 .8	.925	.963	.1123 -1	.229 .6	12.49
4.589	76.351	.4518	1.95 .1	.925	.970	.1120 -1	.230 .0	12.50
4.585	76.361	.4518	1.95 .4	.925	.978	.1117 -1	.230 .3	12.51
4.581	76.372	.4518	1.95 .7	.925	.986	.1115 -1	.231 .1	12.52
4.578	76.383	.4518	1.96 .0	.925	.994	.1112 -1	.231 .4	12.53
4.574	76.393	.4517	1.96 .3	.925	.991	.1110 -1	.231 .8	12.54
4.570	76.404	.4517	1.96 .6	.925	.999	.1107 -1	.232 .2	12.55
4.567	76.415	.4517	1.96 .9	.925	.996	.1105 -1	.232 .5	12.56
4.563	76.426	.4517	1.97 .2	.926	.993	.1102 -1	.232 .8	12.57
4.556	76.447	.4517	1.97 .9	.926	.941	.1099 -1	.233 .3	12.58
4.552	76.457	.4517	1.98 .2	.926	.949	.1096 -1	.233 .6	12.60
4.548	76.468	.4517	1.98 .5	.926	.957	.1092 -1	.234 .4	12.61
4.545	76.478	.4517	1.98 .8	.926	.964	.1089 -1	.234 .8	12.62
4.541	76.489	.4517	1.99 .1	.926	.972	.1087 -1	.234 .8	12.63
4.538	76.500	.4517	1.99 .4	.926	.980	.1084 -1	.235 .1	12.64
4.534	76.510	.4517	1.99 .7	.927	.986	.1081 -1	.235 .5	12.65
4.530	76.521	.4517	2.00 .0	.927	.993	.1079 -1	.235 .8	12.66
4.527	76.531	.4517	2.00 .4	.927	.994	.1077 -1	.236 .2	12.67
4.523	76.542	.4516	2.00 .7	.927	.912	.1074 -1	.236 .6	12.68
4.520	76.552	.4516	2.01 .0	.927	.920	.1072 -1	.237 .0	12.69
4.516	76.562	.4516	2.01 .4	.927	.928	.1069 -1	.237 .4	12.70
4.513	76.573	.4516	2.02 .0	.927	.936	.1067 -1	.238 .1	12.71
4.509	76.584	.4516	2.02 .3	.927	.944	.1064 -1	.238 .5	12.72
4.505	76.594	.4516	2.02 .6	.927	.952	.1062 -1	.238 .8	12.73
4.502	76.604	.4516	2.03 .0	.927	.959	.1060 -1	.239 .2	12.74
4.498	76.614	.4516	2.03 .3	.928	.967	.1057 -1	.239 .6	12.75
4.495	76.625	.4516	2.03 .6	.928	.975	.1055 -1	.240 .0	12.76
4.491	76.635	.4516	2.03 .9	.928	.983	.1052 -1	.240 .3	12.77
4.488	76.645	.4516	2.04 .2	.928	.991	.1050 -1	.240 .7	12.78
4.484	76.656	.4516	2.04 .5	.928	.999	.1048 -1	.240 .7	12.79
4.481	76.666	.4516	2.07 .8	.929	.907	.1045 -1	.241 .1	12.80
4.477	76.676	.4516	2.08 .1	.929	.915	.1043 -1	.241 .5	12.81
4.474	76.686	.4516	2.08 .4	.929	.923	.1041 -1	.242 .2	12.82
4.470	76.697	.4515	2.08 .7	.929	.931	.1038 -1	.242 .6	12.83
4.467	76.707	.4515	2.09 .0	.929	.939	.1036 -1	.243 .1	12.84
4.463	76.717	.4515	2.09 .3	.929	.947	.1034 -1	.243 .5	12.85
4.460	76.727	.4515	2.09 .6	.929	.955	.1031 -1	.243 .9	12.86
4.456	76.737	.4515	2.09 .9	.929	.964	.1029 -1	.243 .7	12.87
4.453	76.746	.4515	2.07 .1	.929	.972	.1027 -1	.244 .1	12.88
4.449	76.756	.4515	2.07 .4	.929	.980	.1024 -1	.244 .5	12.89
4.446	76.768	.4515	2.07 .8	.929	.988	.1022 -1	.244 .9	12.90
4.443	76.778	.4515	2.08 .1	.929	.996	.1020 -1	.245 .3	12.91
4.439	76.788	.4515	2.08 .4	.929	.904	.1017 -1	.245 .6	12.92
4.436	76.798	.4515	2.08 .7	.929	.912	.1015 -1	.246 .0	12.93
4.432	76.808	.4515	2.09 .0	.930	.920	.1013 -1	.246 .4	12.94
4.429	76.818	.4515	2.09 .4	.930	.928	.1010 -1	.246 .8	12.95
4.425	76.828	.4515	2.09 .7	.930	.936	.1008 -1	.247 .1	12.96
4.422	76.838	.4515	2.09 .0	.930	.944	.1006 -1	.247 .5	12.97
4.419	76.848	.4514	2.10 .4	.930	.952	.1004 -1	.247 .9	12.98
4.415	76.858	.4514	2.10 .7	.930	.961	.1001 -1	.248 .3	12.99

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/P <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/a <sup>*</sup>
1.3 .00	.4018 -4	.8304 -2	1.744 -1	.1381	.5658 -2	.7031 -2	.9912	1.98246
1.3 .01	.4003 -4	.8298 -2	1.742 -1	.1380	.5646 -2	.7015 -2	.9913	1.98251
1.3 .03	.3998 -4	.8295 -2	1.739 -1	.1319	.5633 -2	.6999 -2	.9915	1.98253
1.3 .04	.3995 -4	.8285 -2	1.734 -1	.1317	.5620 -2	.6983 -2	.9915	1.98256
1.3 .05	.3994 -4	.8278 -2	1.731 -1	.1316	.5608 -2	.6968 -2	.9915	1.98259
1.3 .06	.3993 -4	.8278 -2	1.728 -1	.1315	.5589 -2	.6957 -2	.9915	1.98261
1.3 .07	.3991 -4	.8257 -2	1.725 -1	.1314	.5570 -2	.6949 -2	.9915	1.98264
1.3 .08	.3989 -4	.8257 -2	1.722 -1	.1313	.5554 -2	.6940 -2	.9915	1.98266
1.3 .09	.3988 -4	.8257 -2	1.719 -1	.1312	.5546 -2	.6931 -2	.9915	1.98268
1.3 .10	.3865 -4	.2247 -2	1.718 -1	.1311	.5533 -2	.6875 -2	.9914	1.98274
1.3 .11	.3864 -4	.2247 -2	1.716 -1	.1310	.5520 -2	.6859 -2	.9914	1.98277
1.3 .12	.3862 -4	.2237 -2	1.710 -1	.1309	.5504 -2	.6844 -2	.9914	1.98280
1.3 .13	.3861 -4	.2236 -2	1.708 -1	.1308	.5492 -2	.6830 -2	.9914	1.98282
1.3 .14	.3860 -4	.2236 -2	1.706 -1	.1307	.5484 -2	.6816 -2	.9914	1.98284
1.3 .15	.3859 -4	.2235 -2	1.704 -1	.1306	.5476 -2	.6803 -2	.9914	1.98286
1.3 .16	.3858 -4	.2235 -2	1.702 -1	.1305	.5468 -2	.6790 -2	.9914	1.98287
1.3 .17	.3857 -4	.2235 -2	1.700 -1	.1304	.5460 -2	.6778 -2	.9914	1.98289
1.3 .18	.3856 -4	.2235 -2	1.698 -1	.1303	.5452 -2	.6765 -2	.9914	1.98293
1.3 .19	.3855 -4	.2218 -2	1.695 -1	.1302	.5444 -2	.6753 -2	.9915	1.98295
1.3 .20	.3772 -4	.2208 -2	1.693 -1	.1301	.5416 -2	.6723 -2	.9915	1.98300
1.3 .21	.3770 -4	.2197 -2	1.690 -1	.1300	.5408 -2	.6709 -2	.9915	1.98305
1.3 .22	.3769 -4	.2187 -2	1.688 -1	.1300	.5399 -2	.6696 -2	.9915	1.98308
1.3 .23	.3768 -4	.2187 -2	1.686 -1	.1300	.5390 -2	.6687 -2	.9915	1.98310
1.3 .24	.3767 -4	.2178 -2	1.684 -1	.1300	.5381 -2	.6679 -2	.9915	1.98312
1.3 .25	.3766 -4	.2178 -2	1.682 -1	.1300	.5372 -2	.6671 -2	.9915	1.98314
1.3 .26	.3765 -4	.2178 -2	1.680 -1	.1300	.5363 -2	.6664 -2	.9915	1.98316
1.3 .27	.3764 -4	.2168 -2	1.678 -1	.1300	.5354 -2	.6654 -2	.9916	1.98318
1.3 .28	.3763 -4	.2163 -2	1.676 -1	.1300	.5345 -2	.6648 -2	.9916	1.98320
1.3 .29	.3760 -4	.2158 -2	1.674 -1	.1300	.5306 -2	.6590 -2	.9916	1.98323
1.3 .30	.3759 -4	.2158 -2	1.672 -1	.1300	.5297 -2	.6581 -2	.9916	1.98325
1.3 .31	.3758 -4	.2158 -2	1.670 -1	.1300	.5288 -2	.6572 -2	.9916	1.98326
1.3 .32	.3757 -4	.2158 -2	1.668 -1	.1300	.5279 -2	.6563 -2	.9916	1.98328
1.3 .33	.3756 -4	.2158 -2	1.666 -1	.1300	.5270 -2	.6554 -2	.9916	1.98330
1.3 .34	.3755 -4	.2158 -2	1.664 -1	.1300	.5261 -2	.6545 -2	.9916	1.98332
1.3 .35	.3754 -4	.2158 -2	1.662 -1	.1300	.5252 -2	.6536 -2	.9916	1.98333
1.3 .36	.3753 -4	.2158 -2	1.660 -1	.1300	.5243 -2	.6527 -2	.9917	1.98335
1.3 .37	.3750 -4	.2125 -2	1.658 -1	.1300	.5234 -2	.6518 -2	.9917	1.98336
1.3 .38	.3748 -4	.2125 -2	1.656 -1	.1300	.5225 -2	.6510 -2	.9917	1.98338
1.3 .39	.3747 -4	.2111 -2	1.654 -1	.1300	.5216 -2	.6501 -2	.9917	1.98340
1.3 .40	.3468 -4	.2107 -2	1.644 -1	.1282	.5209 -2	.6476 -2	.9916	1.98342
1.3 .41	.3449 -4	.2108 -2	1.641 -1	.1281	.5200 -2	.6461 -2	.9916	1.98343
1.3 .42	.3436 -4	.2097 -2	1.639 -1	.1280	.5191 -2	.6452 -2	.9916	1.98345
1.3 .43	.3424 -4	.2093 -2	1.636 -1	.1279	.5182 -2	.6443 -2	.9916	1.98346
1.3 .44	.3419 -4	.2088 -2	1.634 -1	.1278	.5173 -2	.6434 -2	.9916	1.98347
1.3 .45	.3419 -4	.2088 -2	1.632 -1	.1277	.5164 -2	.6425 -2	.9916	1.98348
1.3 .46	.3419 -4	.2074 -2	1.630 -1	.1276	.5155 -2	.6416 -2	.9916	1.98349
1.3 .47	.3419 -4	.2070 -2	1.628 -1	.1275	.5146 -2	.6407 -2	.9916	1.98350
1.3 .48	.3419 -4	.2065 -2	1.626 -1	.1274	.5137 -2	.6398 -2	.9916	1.98351
1.3 .49	.3419 -4	.2065 -2	1.624 -1	.1273	.5128 -2	.6390 -2	.9916	1.98352
1.3 .50	.3337 -4	.2061 -2	1.619 -1	.1273	.5060 -2	.6384 -2	.9916	1.98354
1.3 .51	.3335 -4	.2058 -2	1.617 -1	.1272	.5051 -2	.6375 -2	.9916	1.98355
1.3 .52	.3334 -4	.2058 -2	1.615 -1	.1271	.5042 -2	.6366 -2	.9916	1.98356
1.3 .53	.3333 -4	.2058 -2	1.613 -1	.1270	.5033 -2	.6357 -2	.9916	1.98357
1.3 .54	.3332 -4	.2058 -2	1.611 -1	.1269	.5024 -2	.6348 -2	.9916	1.98358
1.3 .55	.3331 -4	.2058 -2	1.609 -1	.1268	.5015 -2	.6339 -2	.9916	1.98359
1.3 .56	.3330 -4	.2058 -2	1.607 -1	.1267	.5006 -2	.6330 -2	.9916	1.98360
1.3 .57	.3330 -4	.2058 -2	1.605 -1	.1266	.4997 -2	.6321 -2	.9916	1.98361
1.3 .58	.3330 -4	.2058 -2	1.603 -1	.1265	.4988 -2	.6312 -2	.9916	1.98362
1.3 .59	.3330 -4	.2058 -2	1.601 -1	.1264	.4979 -2	.6303 -2	.9916	1.98363
1.3 .60	.3218 -4	.2015 -2	1.596 -1	.1263	.4961 -2	.6159 -2	.9920	1.98367
1.3 .61	.3207 -4	.2012 -2	1.594 -1	.1262	.4950 -2	.6149 -2	.9920	1.98368
1.3 .62	.3205 -4	.2008 -2	1.592 -1	.1261	.4940 -2	.6139 -2	.9920	1.98369
1.3 .63	.3204 -4	.2003 -2	1.589 -1	.1260	.4930 -2	.6129 -2	.9920	1.98370
1.3 .64	.3204 -4	.2003 -2	1.587 -1	.1259	.4920 -2	.6119 -2	.9920	1.98371
1.3 .65	.3204 -4	.2003 -2	1.585 -1	.1258	.4910 -2	.6109 -2	.9920	1.98372
1.3 .66	.3204 -4	.2003 -2	1.583 -1	.1257	.4900 -2	.6099 -2	.9920	1.98373
1.3 .67	.3204 -4	.2003 -2	1.581 -1	.1256	.4890 -2	.6089 -2	.9920	1.98374
1.3 .68	.3204 -4	.2003 -2	1.579 -1	.1255	.4880 -2	.6079 -2	.9920	1.98375
1.3 .69	.3204 -4	.2003 -2	1.578 -1	.1255	.4870 -2	.6069 -2	.9920	1.98376
1.3 .70	.3104 -4	.1973 -2	1.573 -1	.1254	.4860 -2	.6059 -2	.9920	1.98377
1.3 .71	.3093 -4	.1969 -2	1.571 -1	.1253	.4850 -2	.6049 -2	.9920	1.98378
1.3 .72	.3082 -4	.1965 -2	1.569 -1	.1252	.4840 -2	.6039 -2	.9920	1.98379
1.3 .73	.3071 -4	.1961 -2	1.567 -1	.1251	.4830 -2	.6029 -2	.9920	1.98380
1.3 .74	.3060 -4	.1956 -2	1.564 -1	.1251	.4820 -2	.6019 -2	.9920	1.98381
1.3 .75	.3049 -4	.1952 -2	1.562 -1	.1250	.4810 -2	.6009 -2	.9920	1.98382
1.3 .76	.3038 -4	.1948 -2	1.560 -1	.1249	.4800 -2	.5999 -2	.9920	1.98383
1.3 .77	.3038 -4	.1944 -2	1.558 -1	.1248	.4790 -2	.5989 -2	.9920	1.98384
1.3 .78	.3038 -4	.1940 -2	1.556 -1	.1247	.4780 -2	.5979 -2	.9920	1.98385
1.3 .79	.3038 -4	.1936 -2	1.554 -1	.1246	.4770 -2	.5969 -2	.9920	1.98386
1.3 .80	.2995 -4	.1931 -2	1.551 -1	.1245	.4754 -2	.5950 -2	.9920	1.98443
1.3 .81	.2997 -4	.1928 -2	1.549 -1	.1244	.4744 -2	.5930 -2	.9920	1.98445
1.3 .82	.2997 -4	.1924 -2	1.547 -1	.1244	.4734 -2	.5910 -2	.9920	1.98446
1.3 .83	.2997 -4	.1920 -2	1.545 -1	.1243	.4724 -2	.5890 -2	.9920	1.98448
1.3 .84	.2997 -4	.1916 -2	1.543 -1	.1243	.4714 -2	.5870 -2	.9920	1.98449
1.3 .85	.2997 -4	.1912 -2	1.541 -1	.1242	.4704 -2	.5850 -2	.9920	1.98450
1.3 .86	.2993 -4	.1907 -2	1.539 -1	.1241	.4694 -2	.5830 -2	.9920	1.98451
1.3 .87	.2993 -4	.1903 -2	1.537 -1	.1240	.4684 -2	.5810 -2	.9920	1.98452
1.3 .88	.2991 -4	.1899 -2	1.535 -1	.1239	.4674 -2	.5790 -2	.9920	1.98453
1.3 .89	.2991 -4	.1895 -2	1.533 -1	.1237	.4664 -2	.5780 -2	.9920	1.98454
1.3 .90	.2891 -4	.1891 -2	1.531 -1	.1236	.4654 -2	.5770 -2	.9920	1.98455
1.3 .91	.2887 -4	.1887 -2	1.529 -1	.1235	.4644 -2	.5760 -2	.9920	1.98456
1.3 .92	.2883 -4	.1883 -2	1.527 -1	.1234	.4634 -2	.5750 -2	.9920	1.98457
1.3 .93	.2866 -4	.1879 -2	1.525 -1	.1233	.4624 -2	.5740 -2	.9920	1.98458
1.3 .94	.2860 -4	.1875 -2	1.523 -1	.1232	.4614 -2	.5730 -2	.9920	1.98459
1.3 .95	.2840 -4	.1871 -2	1.521 -1	.1231	.4604 -2	.5720 -2	.9920	1.98460
1.3 .96	.2830 -4	.1867 -2	1.519 -1	.1230	.4594 -2	.5710 -2	.9920	1.98461
1.3 .97	.2820 -4	.1863 -2	1.517 -1	.1229	.4584 -2	.5700 -2	.9920	1.98462
1.3 .98	.2810 -4	.1859 -2	1.515 -1	.1228	.4574 -2	.5690 -2	.9920	1.98463
1.3 .99	.2800 -4	.1855 -2	1.513 -1	.1227	.4564 -2	.5680 -2	.9920	1.98465

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\gamma$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
4.412	76.868	.4514	811.0	.930	53.69	.9991-2	248.7	13.00
4.408	76.876	.4514	811.3	.930	53.77	.9969-2	249.1	13.01
4.405	76.888	.4514	811.7	.930	53.85	.9947-2	249.4	13.02
4.402	76.898	.4514	812.0	.931	53.94	.9924-2	249.8	13.03
4.398	76.908	.4514	812.3	.931	54.03	.9902-2	250.2	13.04
4.395	76.918	.4514	812.6	.931	54.12	.9880-2	250.6	13.05
4.391	76.928	.4514	812.9	.931	54.21	.9858-2	251.0	13.06
4.388	76.938	.4514	813.2	.931	54.30	.9836-2	251.4	13.07
4.385	76.947	.4514	813.6	.931	54.39	.9814-2	251.7	13.08
4.381	76.957	.4514	813.9	.931	54.42	.9792-2	252.1	13.09
4.378	76.967	.4514	814.3	.931	54.50	.9770-2	252.5	13.10
4.375	76.977	.4514	814.6	.931	54.58	.9749-2	252.9	13.11
4.371	76.987	.4514	814.9	.931	54.67	.9728-2	253.3	13.12
4.368	76.996	.4514	815.2	.931	54.75	.9707-2	253.7	13.13
4.365	76.105	.4514	815.5	.932	54.83	.9684-2	254.1	13.14
4.362	77.015	.4514	815.9	.932	54.91	.9664-2	254.5	13.15
4.359	77.026	.4514	816.2	.932	54.99	.9641-2	254.8	13.16
4.355	77.035	.4514	816.6	.932	55.07	.9620-2	255.2	13.17
4.351	77.045	.4514	816.9	.932	55.16	.9598-2	255.6	13.18
4.348	77.055	.4514	817.2	.932	55.24	.9577-2	256.0	13.19
4.345	77.065	.4514	817.6	.932	55.32	.9556-2	256.4	13.20
4.341	77.074	.4514	817.9	.932	55.40	.9535-2	256.8	13.21
4.338	77.084	.4514	818.2	.932	55.49	.9514-2	257.2	13.22
4.335	77.093	.4514	818.5	.932	55.57	.9493-2	257.5	13.23
4.332	77.103	.4514	818.9	.932	55.65	.9472-2	257.9	13.24
4.329	77.113	.4514	819.2	.933	55.74	.9451-2	258.3	13.25
4.325	77.122	.4514	819.5	.933	55.82	.9430-2	258.7	13.26
4.322	77.132	.4514	819.9	.933	55.90	.9410-2	259.1	13.27
4.319	77.141	.4514	820.2	.933	55.99	.9389-2	259.5	13.28
4.315	77.151	.4514	820.5	.933	56.07	.9368-2	259.9	13.29
4.312	77.161	.4514	820.9	.933	56.15	.9348-2	260.3	13.30
4.309	77.170	.4514	821.3	.933	56.24	.9327-2	260.7	13.31
4.306	77.180	.4514	821.7	.933	56.32	.9307-2	261.1	13.32
4.303	77.189	.4514	822.1	.934	56.40	.9286-2	261.4	13.33
4.299	77.199	.4514	822.5	.934	56.49	.9266-2	261.8	13.34
4.295	77.208	.4514	822.9	.934	56.57	.9246-2	262.2	13.35
4.293	77.217	.4514	823.3	.934	56.65	.9226-2	262.6	13.36
4.288	77.227	.4514	823.7	.934	56.74	.9206-2	263.0	13.37
4.286	77.236	.4514	824.1	.934	56.82	.9186-2	263.4	13.38
4.283	77.246	.4514	824.5	.934	56.90	.9166-2	263.8	13.39
4.280	77.255	.4514	824.9	.934	56.99	.9145-2	264.2	13.40
4.277	77.265	.4514	825.3	.934	57.07	.9126-2	264.6	13.41
4.273	77.274	.4514	825.7	.934	57.15	.9106-2	265.0	13.42
4.270	77.283	.4514	826.1	.935	57.24	.9086-2	265.4	13.43
4.267	77.293	.4514	826.5	.935	57.32	.9066-2	265.8	13.44
4.264	77.302	.4514	826.9	.935	57.41	.9046-2	266.2	13.45
4.261	77.311	.4514	827.3	.935	57.49	.9027-2	266.6	13.46
4.258	77.321	.4514	827.7	.935	57.57	.9007-2	267.0	13.47
4.254	77.330	.4514	828.1	.935	57.66	.8988-2	267.4	13.48
4.251	77.339	.4514	828.5	.935	57.74	.8968-2	267.7	13.49
4.248	77.348	.4514	827.6	.935	57.83	.8949-2	268.1	13.50
4.245	77.358	.4514	827.9	.935	57.91	.8930-2	268.5	13.51
4.239	77.367	.4514	828.3	.935	57.99	.8911-2	268.9	13.52
4.235	77.375	.4514	828.7	.936	58.07	.8892-2	269.3	13.53
4.232	77.384	.4514	829.1	.936	58.15	.8872-2	269.7	13.54
4.229	77.394	.4514	829.5	.936	58.23	.8853-2	270.1	13.55
4.226	77.404	.4514	829.9	.936	58.32	.8834-2	270.5	13.56
4.223	77.413	.4514	830.3	.936	58.40	.8815-2	270.9	13.57
4.220	77.423	.4514	830.6	.936	58.50	.8796-2	271.3	13.58
4.217	77.431	.4514	830.6	.936	58.59	.8777-2	271.7	13.59
4.214	77.440	.4514	831.0	.936	58.67	.8758-2	272.1	13.60
4.211	77.449	.4514	831.3	.936	58.76	.8739-2	272.5	13.61
4.207	77.456	.4514	831.6	.936	58.84	.8720-2	272.9	13.62
4.204	77.467	.4514	832.0	.936	58.93	.8702-2	273.3	13.63
4.201	77.477	.4514	832.4	.937	59.01	.8683-2	273.7	13.64
4.198	77.486	.4514	832.8	.937	59.10	.8665-2	274.1	13.65
4.195	77.495	.4514	833.2	.937	59.19	.8646-2	274.5	13.66
4.192	77.504	.4514	833.6	.937	59.27	.8627-2	274.9	13.67
4.189	77.513	.4514	834.0	.937	59.35	.8609-2	275.3	13.68
4.186	77.521	.4514	834.4	.937	59.44	.8591-2	275.7	13.69
4.183	77.540	.4514	834.7	.937	59.53	.8572-2	276.1	13.70
4.180	77.549	.4514	835.0	.937	59.61	.8556-2	276.5	13.71
4.177	77.558	.4514	835.4	.937	59.70	.8536-2	276.9	13.72
4.174	77.567	.4514	835.7	.937	59.78	.8518-2	277.3	13.73
4.171	77.576	.4514	836.1	.937	59.87	.8500-2	277.7	13.74
4.168	77.585	.4514	836.5	.937	59.95	.8482-2	278.1	13.75
4.165	77.593	.4514	836.8	.938	60.13	.8464-2	278.5	13.76
4.162	77.602	.4514	837.1	.938	60.21	.8446-2	278.9	13.77
4.159	77.611	.4514	837.4	.938	60.30	.8410-2	279.4	13.78
4.156	77.620	.4514	837.8	.938	60.39	.8392-2	279.8	13.79
4.152	77.629	.4514	838.2	.938	60.47	.8374-2	280.2	13.80
4.149	77.638	.4509	838.5	.938	60.56	.8356-2	280.6	13.81
4.146	77.647	.4509	838.9	.938	60.65	.8339-2	281.0	13.82
4.143	77.653	.4509	839.2	.938	60.74	.8321-2	281.4	13.83
4.140	77.664	.4509	839.5	.938	60.82	.8304-2	281.8	13.84
4.137	77.673	.4509	839.9	.939	60.91	.8286-2	282.2	13.85
4.135	77.682	.4509	840.2	.939	60.99	.8269-2	282.6	13.86
4.132	77.690	.4509	840.6	.939	61.08	.8251-2	283.0	13.87
4.129	77.699	.4509	840.9	.939	61.17	.8234-2	283.4	13.88
4.126	77.708	.4509	841.3	.939	61.25	.8216-2	284.2	13.89
4.123	77.717	.4509	841.6	.939	61.34	.8199-2	284.6	13.91
4.120	77.725	.4509	842.0	.939	61.43	.8182-2	285.1	13.93
4.117	77.734	.4509	842.7	.939	61.51	.8165-2	285.5	13.94
4.114	77.743	.4509	843.0	.939	61.60	.8148-2	285.9	13.95
4.108	77.750	.4509	843.4	.939	61.77	.8131-2	286.3	13.96
4.105	77.759	.4509	843.7	.939	61.86	.8097-2	286.7	13.97
4.102	77.766	.4509	844.1	.940	61.95	.8080-2	287.1	13.98
4.099	77.776	.4509	844.4	.940	62.04	.8063-2	287.5	13.99

TABLE I. - VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	s/s <sub>t</sub>	q/P <sub>t</sub>	A*/A	V/V <sub>0</sub>	V/V <sup>0</sup>
14.00	.2790-4	.1851-2	.1508-1	.1228	.4558-2	.5655-2	.9924	1.98487
14.01	.2781-4	.1847-2	.1505-1	.1227	.4546-2	.5645-2	.9924	1.98489
14.02	.2777-4	.1843-2	.1503-1	.1226	.4539-2	.5635-2	.9924	1.98491
14.03	.2776-4	.1840-2	.1501-1	.1225	.4532-2	.5628-2	.9924	1.98493
14.04	.2775-4	.1838-2	.1499-1	.1224	.4526-2	.5621-2	.9924	1.98495
14.05	.2773-4	.1836-2	.1497-1	.1223	.4520-2	.5614-2	.9924	1.98497
14.06	.2772-4	.1834-2	.1495-1	.1222	.4514-2	.5607-2	.9924	1.98499
14.07	.2773-4	.1832-2	.1493-1	.1221	.4508-2	.5598-2	.9924	1.98502
14.08	.2771-4	.1830-2	.1491-1	.1220	.4492-2	.5591-2	.9924	1.98504
14.09	.2770-4	.1828-2	.1489-1	.1220	.4473-2	.5585-2	.9924	1.98506
14.10	.2659-4	.1818-2	.1487-1	.1219	.4466-2	.5578-2	.9924	1.98508
14.11	.2658-4	.1809-2	.1485-1	.1218	.4459-2	.5571-2	.9924	1.98510
14.12	.2657-4	.1801-2	.1483-1	.1217	.4452-2	.5564-2	.9924	1.98512
14.13	.2656-4	.1791-2	.1480-1	.1216	.4445-2	.5557-2	.9924	1.98514
14.14	.2655-4	.1790-2	.1478-1	.1215	.4438-2	.5550-2	.9924	1.98516
14.15	.2654-4	.1794-2	.1476-1	.1214	.4431-2	.5449-2	.9924	1.98518
14.16	.2653-4	.1790-2	.1474-1	.1213	.4424-2	.5442-2	.9924	1.98520
14.17	.2652-4	.1786-2	.1472-1	.1212	.4417-2	.5435-2	.9924	1.98522
14.18	.2652-4	.1788-2	.1470-1	.1212	.4410-2	.5428-2	.9924	1.98524
14.19	.2651-4	.1779-2	.1469-1	.1212	.4390-2	.5421-2	.9924	1.98527
14.20	.2608-4	.1775-2	.1466-1	.1211	.4370-2	.5415-2	.9924	1.98530
14.21	.2593-4	.1771-2	.1464-1	.1210	.4363-2	.5414-2	.9924	1.98531
14.22	.2584-4	.1768-2	.1462-1	.1209	.4356-2	.5403-2	.9924	1.98533
14.23	.2575-4	.1764-2	.1460-1	.1208	.4349-2	.5396-2	.9924	1.98535
14.24	.2566-4	.1760-2	.1458-1	.1207	.4342-2	.5389-2	.9924	1.98537
14.25	.2557-4	.1757-2	.1456-1	.1206	.4335-2	.5382-2	.9924	1.98539
14.26	.2554-4	.1753-2	.1454-1	.1205	.4329-2	.5375-2	.9924	1.98541
14.27	.2554-4	.1749-2	.1452-1	.1204	.4322-2	.5368-2	.9924	1.98543
14.28	.2551-4	.1746-2	.1450-1	.1203	.4309-2	.5361-2	.9924	1.98545
14.29	.2551-4	.1742-2	.1448-1	.1203	.4302-2	.5354-2	.9924	1.98547
14.30	.2514-4	.1739-2	.1446-1	.1202	.4284-2	.5314-2	.9924	1.98549
14.31	.2505-4	.1735-2	.1444-1	.1202	.4275-2	.5304-2	.9924	1.98551
14.32	.2496-4	.1731-2	.1442-1	.1201	.4266-2	.5295-2	.9924	1.98553
14.33	.2488-4	.1728-2	.1440-1	.1200	.4257-2	.5287-2	.9924	1.98555
14.34	.2479-4	.1724-2	.1438-1	.1199	.4249-2	.5279-2	.9924	1.98557
14.35	.2470-4	.1720-2	.1436-1	.1198	.4241-2	.5271-2	.9924	1.98559
14.36	.2460-4	.1716-2	.1434-1	.1197	.4233-2	.5264-2	.9924	1.98561
14.37	.2456-4	.1714-2	.1432-1	.1196	.4225-2	.5257-2	.9924	1.98563
14.38	.2446-4	.1710-2	.1430-1	.1195	.4217-2	.5250-2	.9924	1.98565
14.39	.2443-4	.1707-2	.1428-1	.1195	.4209-2	.5243-2	.9924	1.98567
14.40	.2429-4	.1703-2	.1426-1	.1194	.4197-2	.5207-2	.9924	1.98569
14.41	.2421-4	.1700-2	.1424-1	.1193	.4188-2	.5200-2	.9924	1.98571
14.42	.2412-4	.1696-2	.1422-1	.1192	.4181-2	.5193-2	.9924	1.98573
14.43	.2405-4	.1692-2	.1420-1	.1191	.4173-2	.5186-2	.9924	1.98575
14.44	.2396-4	.1689-2	.1418-1	.1190	.4163-2	.5179-2	.9924	1.98577
14.45	.2398-4	.1686-2	.1416-1	.1189	.4156-2	.5172-2	.9924	1.98579
14.46	.2398-4	.1682-2	.1414-1	.1189	.4148-2	.5165-2	.9924	1.98580
14.47	.2397-4	.1679-2	.1413-1	.1189	.4140-2	.5158-2	.9924	1.98582
14.48	.2396-4	.1675-2	.1412-1	.1188	.4132-2	.5151-2	.9924	1.98584
14.49	.2395-4	.1672-2	.1409-1	.1187	.4124-2	.5144-2	.9924	1.98586
14.50	.2347-4	.1669-2	.1407-1	.1186	.4113-2	.5106-2	.9924	1.98588
14.51	.2343-4	.1665-2	.1405-1	.1185	.4104-2	.5099-2	.9924	1.98590
14.52	.2341-4	.1662-2	.1403-1	.1184	.4096-2	.5091-2	.9924	1.98592
14.53	.2341-4	.1658-2	.1401-1	.1183	.4088-2	.5084-2	.9924	1.98594
14.54	.2339-4	.1654-2	.1399-1	.1182	.4079-2	.5076-2	.9924	1.98596
14.55	.2330-4	.1650-2	.1397-1	.1181	.4071-2	.5069-2	.9924	1.98598
14.56	.2330-4	.1646-2	.1395-1	.1181	.4063-2	.5062-2	.9924	1.98600
14.57	.2329-4	.1642-2	.1394-1	.1180	.4055-2	.5055-2	.9924	1.98602
14.58	.2327-4	.1638-2	.1392-1	.1179	.4047-2	.5048-2	.9924	1.98604
14.59	.2320-4	.1630-2	.1371-1	.1171	.4039-2	.5041-2	.9924	1.98605
14.60	.2269-4	.1635-2	.1388-1	.1178	.4031-2	.5005-2	.9924	1.98607
14.61	.2262-4	.1632-2	.1386-1	.1177	.4023-2	.4999-2	.9924	1.98609
14.62	.2254-4	.1628-2	.1384-1	.1176	.4015-2	.4993-2	.9924	1.98611
14.63	.2246-4	.1625-2	.1382-1	.1176	.4007-2	.4987-2	.9924	1.98613
14.64	.2239-4	.1622-2	.1380-1	.1175	.3999-2	.4981-2	.9924	1.98615
14.65	.2234-4	.1619-2	.1378-1	.1174	.3991-2	.4975-2	.9924	1.98617
14.66	.2224-4	.1616-2	.1377-1	.1173	.3983-2	.4969-2	.9924	1.98619
14.67	.2221-4	.1612-2	.1375-1	.1173	.3975-2	.4963-2	.9924	1.98620
14.68	.2220-4	.1609-2	.1373-1	.1172	.3967-2	.4957-2	.9924	1.98622
14.69	.2201-4	.1606-2	.1371-1	.1171	.3959-2	.4951-2	.9924	1.98624
14.70	.2194-4	.1608-2	.1369-1	.1170	.3951-2	.4945-2	.9924	1.98626
14.71	.2192-4	.1599-2	.1367-1	.1169	.3943-2	.4939-2	.9924	1.98628
14.72	.2190-4	.1596-2	.1365-1	.1168	.3935-2	.4933-2	.9924	1.98630
14.73	.2187-4	.1593-2	.1363-1	.1168	.3927-2	.4927-2	.9924	1.98632
14.74	.2185-4	.1589-2	.1360-1	.1168	.3919-2	.4921-2	.9924	1.98634
14.75	.2184-4	.1586-2	.1358-1	.1168	.3911-2	.4915-2	.9924	1.98636
14.76	.2183-4	.1580-2	.1357-1	.1168	.3904-2	.4908-2	.9924	1.98638
14.77	.2181-4	.1577-2	.1355-1	.1164	.3896-2	.4899-2	.9924	1.98640
14.78	.2181-4	.1577-2	.1353-1	.1163	.3889-2	.4892-2	.9924	1.98642
14.79	.2179-4	.1574-2	.1353-1	.1163	.3881-2	.4885-2	.9924	1.98644
14.80	.2122-4	.1570-2	.1351-1	.1168	.3873-2	.4803-2	.9924	1.98646
14.81	.2115-4	.1567-2	.1349-1	.1168	.3866-2	.4794-2	.9924	1.98648
14.82	.2110-4	.1564-2	.1348-1	.1168	.3858-2	.4786-2	.9924	1.98650
14.83	.2101-4	.1561-2	.1346-1	.1168	.3850-2	.4778-2	.9924	1.98652
14.84	.2094-4	.1558-2	.1344-1	.1159	.3843-2	.4765-2	.9924	1.98653
14.85	.2087-4	.1555-2	.1348-1	.1159	.3835-2	.4756-2	.9924	1.98655
14.86	.2080-4	.1552-2	.1340-1	.1158	.3827-2	.4746-2	.9924	1.98657
14.87	.2073-4	.1549-2	.1339-1	.1157	.3820-2	.4737-2	.9924	1.98659
14.88	.2066-4	.1546-2	.1337-1	.1156	.3812-2	.4727-2	.9924	1.98660
14.89	.2059-4	.1543-2	.1335-1	.1155	.3805-2	.4718-2	.9924	1.98662
14.90	.2053-4	.1539-2	.1333-1	.1155	.3797-2	.4709-2	.9924	1.98664
14.91	.2046-4	.1536-2	.1332-1	.1154	.3790-2	.4699-2	.9924	1.98666
14.92	.2039-4	.1530-2	.1328-1	.1153	.3783-2	.4690-2	.9924	1.98668
14.93	.2032-4	.1527-2	.1326-1	.1152	.3775-2	.4681-2	.9924	1.98670
14.94	.2026-4	.1524-2	.1324-1	.1151	.3768-2	.4673-2	.9924	1.98671
14.95	.2021-4	.1521-2	.1323-1	.1150	.3760-2	.4665-2	.9924	1.98673
14.96	.2018-4	.1518-2	.1320-1	.1149	.3753-2	.4657-2	.9924	1.98675
14.97	.2013-4	.1515-2	.1318-1	.1148	.3746-2	.4649-2	.9924	1.98677
14.98	.2009-4	.1511-2	.1316-1	.1148	.3739-2	.4641-2	.9924	1.98679
14.99	.1993-4	.1507-2	.1315-1	.1148	.3731-2	.4633-2	.9924	1.98680

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\gamma$	$M_2$	$P_2/P_1$	$P_2/\rho_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/\rho_1$	$M$
4.096	77.795	.4509	2.446	3.940	62.18	.8046-8	288.3	14.00
4.093	77.803	.4508	2.451	3.940	62.21	.8022-2	288.8	14.01
4.090	77.812	.4508	2.456	3.940	62.30	.8022-2	289.2	14.02
4.087	77.821	.4508	2.461	3.940	62.39	.7992-2	289.6	14.03
4.084	77.830	.4508	2.466	3.940	62.47	.7979-2	290.0	14.04
4.081	77.838	.4508	2.471	3.940	62.56	.7962-2	290.4	14.05
4.079	77.846	.4508	2.476	3.940	62.65	.7944-2	290.8	14.06
4.076	77.855	.4508	2.481	3.940	62.74	.7929-2	291.2	14.07
4.073	77.863	.4508	2.487	3.940	62.83	.7913-2	291.6	14.08
4.070	77.872	.4508	2.497	3.940	62.91	.7896-2	292.0	14.09
4.067	77.880	.4508	2.483	3.941	63.00	.7880-2	292.5	14.10
4.064	77.889	.4508	2.498	3.941	63.09	.7864-2	292.9	14.11
4.061	77.897	.4508	2.493	3.941	63.18	.7847-2	293.3	14.12
4.058	77.906	.4508	2.498	3.941	63.27	.7831-2	293.7	14.13
4.055	77.914	.4508	2.503	3.941	63.36	.7815-2	294.1	14.14
4.053	77.923	.4508	2.500	3.941	63.44	.7799-2	294.5	14.15
4.050	77.931	.4508	2.504	3.941	63.53	.7783-2	294.9	14.16
4.047	77.939	.4508	2.501	3.941	63.62	.7767-2	295.3	14.17
4.044	77.948	.4508	2.504	3.941	63.71	.7750-2	295.8	14.18
4.041	77.956	.4508	2.514	3.941	63.80	.7734-2	296.2	14.19
4.038	77.965	.4508	2.518	3.941	63.89	.7718-2	296.6	14.20
4.035	77.973	.4507	2.520	3.942	63.98	.7703-2	297.0	14.21
4.033	77.981	.4507	2.525	3.942	64.06	.7687-2	297.5	14.22
4.030	77.990	.4507	2.528	3.942	64.15	.7671-2	297.9	14.23
4.027	77.998	.4507	2.532	3.942	64.24	.7655-2	298.3	14.24
4.024	78.006	.4507	2.535	3.942	64.33	.7639-2	298.7	14.25
4.021	78.015	.4507	2.538	3.942	64.51	.7624-2	299.1	14.26
4.018	78.023	.4507	2.542	3.942	64.60	.7608-2	299.5	14.27
4.015	78.031	.4507	2.547	3.942	64.69	.7592-2	300.0	14.28
4.013	78.040	.4507	2.550	3.942	64.77	.7577-2	300.4	14.29
4.010	78.048	.4507	2.554	3.942	64.78	.7561-2	300.8	14.30
4.007	78.056	.4507	2.557	3.942	64.96	.7545-2	301.2	14.31
4.004	78.064	.4507	2.561	3.942	65.05	.7530-2	301.6	14.32
4.002	78.073	.4507	2.564	3.942	65.15	.7515-2	302.0	14.33
3.999	78.081	.4507	2.568	3.942	65.25	.7500-2	302.4	14.34
3.996	78.089	.4507	2.572	3.943	65.31	.7484-2	302.8	14.35
3.993	78.097	.4507	2.575	3.943	65.40	.7469-2	303.3	14.36
3.990	78.105	.4507	2.578	3.943	65.49	.7454-2	303.8	14.37
3.988	78.114	.4507	2.582	3.943	65.58	.7439-2	304.2	14.38
3.985	78.122	.4507	2.586	3.943	65.58	.7424-2	304.6	14.39
3.982	78.130	.4507	2.590	3.943	65.67	.7409-2	305.0	14.40
3.979	78.138	.4507	2.593	3.943	65.76	.7393-2	305.4	14.41
3.977	78.146	.4506	2.597	3.943	65.85	.7378-2	305.8	14.42
3.974	78.154	.4506	2.600	3.943	65.94	.7363-2	306.2	14.43
3.971	78.162	.4506	2.604	3.943	66.03	.7348-2	306.7	14.44
3.968	78.171	.4506	2.608	3.943	66.12	.7334-2	307.1	14.45
3.966	78.179	.4506	2.611	3.943	66.22	.7319-2	307.6	14.46
3.963	78.187	.4506	2.615	3.943	66.31	.7304-2	308.0	14.47
3.960	78.195	.4506	2.618	3.944	66.40	.7289-2	308.4	14.48
3.957	78.203	.4506	2.620	3.944	66.49	.7274-2	308.8	14.49
3.955	78.211	.4506	2.622	3.944	66.58	.7260-2	309.3	14.50
3.952	78.219	.4506	2.625	3.944	66.67	.7245-2	309.7	14.51
3.949	78.227	.4506	2.628	3.944	66.76	.7230-2	310.1	14.52
3.946	78.235	.4506	2.631	3.944	66.85	.7216-2	310.5	14.53
3.944	78.243	.4506	2.640	3.944	66.94	.7202-2	310.9	14.54
3.941	78.251	.4506	2.644	3.944	67.03	.7187-2	311.3	14.55
3.938	78.259	.4506	2.647	3.944	67.12	.7172-2	311.7	14.56
3.936	78.267	.4506	2.651	3.944	67.21	.7158-2	312.1	14.57
3.933	78.275	.4506	2.654	3.944	67.30	.7143-2	312.5	14.58
3.930	78.283	.4506	2.658	3.944	67.40	.7129-2	313.1	14.59
3.927	78.291	.4506	2.662	3.944	67.49	.7115-2	313.5	14.60
3.925	78.299	.4506	2.666	3.945	67.58	.7101-2	314.4	14.61
3.922	78.307	.4506	2.669	3.945	67.67	.7086-2	314.8	14.62
3.919	78.315	.4505	2.673	3.945	67.76	.7072-2	315.3	14.63
3.917	78.323	.4505	2.676	3.945	67.85	.7058-2	315.7	14.64
3.914	78.330	.4505	2.680	3.945	67.94	.7044-2	316.1	14.65
3.911	78.338	.4505	2.684	3.945	68.04	.7030-2	316.5	14.66
3.909	78.346	.4505	2.687	3.945	68.13	.7016-2	316.9	14.67
3.906	78.354	.4505	2.691	3.945	68.22	.7002-2	317.3	14.68
3.903	78.362	.4505	2.695	3.945	68.31	.6988-2	317.7	14.69
3.901	78.370	.4505	2.697	3.945	68.40	.6974-2	318.1	14.70
3.898	78.377	.4505	2.700	3.945	68.49	.6960-2	318.5	14.71
3.895	78.385	.4505	2.703	3.945	68.58	.6946-2	318.9	14.72
3.892	78.393	.4505	2.707	3.945	68.67	.6932-2	319.3	14.73
3.889	78.401	.4505	2.711	3.945	68.76	.6918-2	319.7	14.74
3.887	78.409	.4505	2.714	3.945	68.85	.6904-2	320.1	14.75
3.885	78.416	.4505	2.717	3.945	68.95	.6890-2	320.5	14.76
3.882	78.424	.4505	2.720	3.945	69.05	.6876-2	320.9	14.77
3.880	78.432	.4505	2.723	3.945	69.15	.6862-2	321.3	14.78
3.877	78.440	.4505	2.726	3.945	69.23	.6850-2	321.7	14.79
3.874	78.447	.4505	2.730	3.946	69.32	.6836-2	322.2	14.80
3.872	78.455	.4505	2.733	3.946	69.42	.6823-2	322.6	14.81
3.869	78.463	.4505	2.736	3.946	69.51	.6809-2	323.1	14.82
3.866	78.470	.4505	2.739	3.946	69.60	.6796-2	323.5	14.83
3.864	78.478	.4505	2.743	3.946	69.69	.6782-2	323.9	14.84
3.861	78.486	.4504	2.746	3.946	69.78	.6768-2	324.4	14.85
3.859	78.494	.4504	2.749	3.946	69.87	.6754-2	324.8	14.86
3.856	78.501	.4504	2.751	3.946	69.96	.6740-2	325.2	14.87
3.853	78.509	.4504	2.754	3.947	70.05	.6726-2	325.6	14.88
3.851	78.516	.4504	2.756	3.947	70.15	.6712-2	326.1	14.89
3.848	78.524	.4504	2.777	3.947	70.25	.6703-2	326.5	14.90
3.845	78.532	.4504	2.780	3.947	70.35	.6689-2	327.0	14.91
3.843	78.539	.4504	2.783	3.947	70.44	.6675-2	327.4	14.92
3.841	78.547	.4504	2.786	3.947	70.53	.6661-2	327.8	14.93
3.838	78.554	.4504	2.789	3.947	70.63	.6646-2	328.2	14.94
3.835	78.562	.4504	2.792	3.947	70.72	.6632-2	328.6	14.95
3.832	78.569	.4504	2.795	3.947	70.81	.6618-2	329.0	14.96
3.829	78.577	.4504	2.798	3.947	70.91	.6604-2	329.4	14.97
3.826	78.585	.4504	2.800	3.947	71.00	.6589-2	330.1	14.98
3.823	78.592	.4504	2.803	3.947	71.09	.6575-2	330.5	14.99

TABLE I.- VALUES FOR RATIOS OF

M	p/p <sub>t</sub>	p/p <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	a/p <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/a <sup>*</sup>
15 . 00	.1986 -4	.1509 -2	.1316 -1	.1247	.3724 -2	.4617 -2	.9934	.98680
15 . 01	.1979 -4	.1506 -2	.1314 -1	.1246	.3716 -2	.4608 -2	.9934	.98682
15 . 02	.1973 -4	.1503 -2	.1312 -1	.1245	.3709 -2	.4599 -2	.9934	.98683
15 . 03	.1968 -4	.1500 -2	.1311 -1	.1245	.3702 -2	.4590 -2	.9934	.98685
15 . 04	.1963 -4	.1497 -2	.1309 -1	.1244	.3695 -2	.4581 -2	.9934	.98687
15 . 05	.1958 -4	.1495 -2	.1307 -1	.1243	.3687 -2	.4572 -2	.9934	.98689
15 . 06	.1953 -4	.1493 -2	.1305 -1	.1243	.3680 -2	.4563 -2	.9934	.98690
15 . 07	.1948 -4	.1491 -2	.1303 -1	.1242	.3673 -2	.4554 -2	.9934	.98691
15 . 08	.1943 -4	.1489 -2	.1300 -1	.1241	.3666 -2	.4545 -2	.9934	.98692
15 . 09	.1938 -4	.1486 -2	.1300 -1	.1240	.3659 -2	.4536 -2	.9934	.98693
15 . 10	.1933 -4	.1483 -2	.1300 -1	.1240	.3652 -2	.4527 -2	.9935	.98697
15 . 11	.1928 -4	.1480 -2	.1299 -1	.1240	.3645 -2	.4518 -2	.9935	.98699
15 . 12	.1923 -4	.1477 -2	.1297 -1	.1239	.3638 -2	.4510 -2	.9935	.98701
15 . 13	.1909 -4	.1474 -2	.1285 -1	.1238	.3631 -2	.4501 -2	.9935	.98702
15 . 14	.1895 -4	.1471 -2	.1284 -1	.1237	.3624 -2	.4493 -2	.9935	.98704
15 . 15	.1880 -4	.1468 -2	.1283 -1	.1236	.3616 -2	.4485 -2	.9935	.98705
15 . 16	.1866 -4	.1465 -2	.1282 -1	.1235	.3609 -2	.4476 -2	.9935	.98706
15 . 17	.1852 -4	.1463 -2	.1280 -1	.1234	.3602 -2	.4466 -2	.9935	.98707
15 . 18	.1838 -4	.1460 -2	.1279 -1	.1234	.3595 -2	.4457 -2	.9935	.98709
15 . 19	.1824 -4	.1457 -2	.1278 -1	.1234	.3589 -2	.4449 -2	.9935	.98711
15 . 20	.1810 -4	.1454 -2	.1278 -1	.1233	.3582 -2	.4440 -2	.9935	.98714
15 . 21	.1806 -4	.1451 -2	.1268 -2	.1232	.3575 -2	.4433 -2	.9935	.98715
15 . 22	.1802 -4	.1448 -2	.1267 -2	.1231	.3568 -2	.4426 -2	.9935	.98716
15 . 23	.1798 -4	.1445 -2	.1267 -2	.1230	.3561 -2	.4419 -2	.9935	.98718
15 . 24	.1794 -4	.1443 -2	.1267 -2	.1230	.3554 -2	.4412 -2	.9935	.98719
15 . 25	.1789 -4	.1440 -2	.1265 -1	.1229	.3547 -2	.4406 -2	.9935	.98720
15 . 26	.1785 -4	.1437 -2	.1264 -1	.1229	.3540 -2	.4399 -2	.9935	.98721
15 . 27	.1781 -4	.1434 -2	.1263 -1	.1228	.3534 -2	.4392 -2	.9935	.98722
15 . 28	.1777 -4	.1431 -2	.1262 -1	.1227	.3527 -2	.4385 -2	.9935	.98723
15 . 29	.1773 -4	.1428 -2	.1261 -1	.1226	.3520 -2	.4378 -2	.9935	.98724
15 . 30	.1770 -4	.1425 -2	.1260 -1	.1226	.3513 -2	.4371 -2	.9935	.98725
15 . 31	.1766 -4	.1422 -2	.1259 -1	.1225	.3507 -2	.4364 -2	.9935	.98726
15 . 32	.1762 -4	.1419 -2	.1258 -1	.1223	.3500 -2	.4358 -2	.9935	.98727
15 . 33	.1758 -4	.1416 -2	.1257 -1	.1223	.3493 -2	.4351 -2	.9935	.98728
15 . 34	.1754 -4	.1413 -2	.1256 -1	.1222	.3487 -2	.4344 -2	.9935	.98729
15 . 35	.1750 -4	.1410 -2	.1255 -1	.1221	.3480 -2	.4337 -2	.9935	.98730
15 . 36	.1746 -4	.1407 -2	.1254 -1	.1220	.3473 -2	.4330 -2	.9935	.98731
15 . 37	.1742 -4	.1404 -2	.1253 -1	.1219	.3466 -2	.4323 -2	.9935	.98732
15 . 38	.1738 -4	.1401 -2	.1252 -1	.1218	.3459 -2	.4316 -2	.9935	.98733
15 . 39	.1734 -4	.1399 -2	.1251 -1	.1218	.3453 -2	.4309 -2	.9935	.98734
15 . 40	.1730 -4	.1396 -2	.1250 -1	.1218	.3446 -2	.4292 -2	.9935	.98735
15 . 41	.1726 -4	.1393 -2	.1249 -1	.1217	.3440 -2	.4285 -2	.9935	.98736
15 . 42	.1722 -4	.1390 -2	.1248 -1	.1216	.3433 -2	.4278 -2	.9935	.98737
15 . 43	.1718 -4	.1387 -2	.1247 -1	.1215	.3427 -2	.4271 -2	.9935	.98738
15 . 44	.1714 -4	.1384 -2	.1246 -1	.1214	.3420 -2	.4264 -2	.9935	.98739
15 . 45	.1710 -4	.1380 -2	.1245 -1	.1213	.3413 -2	.4257 -2	.9935	.98740
15 . 46	.1706 -4	.1378 -2	.1244 -1	.1213	.3406 -2	.4250 -2	.9935	.98741
15 . 47	.1702 -4	.1375 -2	.1243 -1	.1213	.3400 -2	.4243 -2	.9935	.98742
15 . 48	.1698 -4	.1372 -2	.1242 -1	.1211	.3393 -2	.4236 -2	.9935	.98743
15 . 49	.1695 -4	.1369 -2	.1241 -1	.1211	.3386 -2	.4229 -2	.9935	.98744
15 . 50	.1689 -4	.1370 -2	.1233 -1	.1211	.3380 -2	.4222 -2	.9935	.98745
15 . 51	.1685 -4	.1367 -2	.1233 -1	.1210	.3373 -2	.4215 -2	.9935	.98746
15 . 52	.1681 -4	.1364 -2	.1232 -1	.1210	.3366 -2	.4208 -2	.9935	.98747
15 . 53	.1677 -4	.1361 -2	.1230 -1	.1208	.3359 -2	.4191 -2	.9935	.98748
15 . 54	.1673 -4	.1358 -2	.1229 -1	.1208	.3352 -2	.4184 -2	.9935	.98749
15 . 55	.1669 -4	.1355 -2	.1227 -1	.1207	.3345 -2	.4177 -2	.9935	.98750
15 . 56	.1665 -4	.1352 -2	.1227 -1	.1207	.3338 -2	.4170 -2	.9935	.98751
15 . 57	.1661 -4	.1350 -2	.1225 -1	.1206	.3331 -2	.4163 -2	.9935	.98752
15 . 58	.1657 -4	.1347 -2	.1224 -1	.1205	.3324 -2	.4156 -2	.9935	.98753
15 . 59	.1653 -4	.1344 -2	.1221 -1	.1204	.3317 -2	.4149 -2	.9935	.98754
15 . 60	.1649 -4	.1341 -2	.1221 -1	.1204	.3310 -2	.4142 -2	.9935	.98755
15 . 61	.1645 -4	.1338 -2	.1218 -1	.1203	.3303 -2	.4135 -2	.9935	.98756
15 . 62	.1641 -4	.1335 -2	.1215 -1	.1203	.3306 -2	.4128 -2	.9935	.98757
15 . 63	.1637 -4	.1332 -2	.1213 -1	.1201	.3300 -2	.4121 -2	.9935	.98758
15 . 64	.1633 -4	.1329 -2	.1213 -1	.1201	.3294 -2	.4114 -2	.9935	.98759
15 . 65	.1629 -4	.1326 -2	.1210 -1	.1200	.3287 -2	.4107 -2	.9935	.98760
15 . 66	.1625 -4	.1323 -2	.1209 -1	.1200	.3280 -2	.4100 -2	.9935	.98761
15 . 67	.1621 -4	.1320 -2	.1207 -1	.1199	.3273 -2	.4093 -2	.9935	.98762
15 . 68	.1617 -4	.1317 -2	.1205 -1	.1198	.3266 -2	.4086 -2	.9935	.98763
15 . 69	.1613 -4	.1314 -2	.1203 -1	.1197	.3259 -2	.4079 -2	.9935	.98764
15 . 70	.1598 -4	.1311 -2	.1201 -1	.1197	.3252 -2	.4072 -2	.9935	.98765
15 . 71	.1594 -4	.1308 -2	.1198 -1	.1196	.3245 -2	.4065 -2	.9935	.98766
15 . 72	.1590 -4	.1305 -2	.1195 -1	.1195	.3238 -2	.4058 -2	.9935	.98767
15 . 73	.1586 -4	.1302 -2	.1193 -1	.1194	.3231 -2	.4051 -2	.9935	.98768
15 . 74	.1582 -4	.1299 -2	.1190 -1	.1194	.3224 -2	.4044 -2	.9935	.98769
15 . 75	.1578 -4	.1296 -2	.1188 -1	.1193	.3217 -2	.4037 -2	.9935	.98770
15 . 76	.1574 -4	.1293 -2	.1186 -1	.1193	.3210 -2	.4030 -2	.9935	.98771
15 . 77	.1570 -4	.1290 -2	.1184 -1	.1192	.3203 -2	.4023 -2	.9935	.98772
15 . 78	.1566 -4	.1287 -2	.1182 -1	.1191	.3196 -2	.4016 -2	.9935	.98773
15 . 79	.1562 -4	.1284 -2	.1180 -1	.1190	.3189 -2	.4009 -2	.9935	.98774
15 . 80	.1557 -4	.1281 -2	.1178 -1	.1189	.3182 -2	.4002 -2	.9935	.98775
15 . 81	.1553 -4	.1278 -2	.1176 -1	.1188	.3175 -2	.3995 -2	.9935	.98776
15 . 82	.1549 -4	.1275 -2	.1174 -1	.1187	.3168 -2	.3988 -2	.9935	.98777
15 . 83	.1545 -4	.1272 -2	.1172 -1	.1186	.3161 -2	.3981 -2	.9935	.98778
15 . 84	.1541 -4	.1269 -2	.1170 -1	.1185	.3154 -2	.3974 -2	.9935	.98779
15 . 85	.1537 -4	.1266 -2	.1168 -1	.1184	.3147 -2	.3967 -2	.9935	.98780
15 . 86	.1533 -4	.1263 -2	.1166 -1	.1183	.3140 -2	.3960 -2	.9935	.98781
15 . 87	.1529 -4	.1260 -2	.1164 -1	.1182	.3133 -2	.3953 -2	.9935	.98782
15 . 88	.1525 -4	.1257 -2	.1162 -1	.1181	.3126 -2	.3946 -2	.9935	.98783
15 . 89	.1521 -4	.1254 -2	.1160 -1	.1180	.3119 -2	.3939 -2	.9935	.98784
15 . 90	.1489 -4	.1270 -2	.1173 -1	.1083	.3112 -2	.3885 -2	.9940	.988794
15 . 91	.1485 -4	.1268 -2	.1171 -1	.1082	.3105 -2	.3878 -2	.9940	.988795
15 . 92	.1480 -4	.1265 -2	.1170 -1	.1082	.3108 -2	.3871 -2	.9940	.988796
15 . 93	.1476 -4	.1263 -2	.1168 -1	.1081	.3101 -2	.3864 -2	.9940	.988797
15 . 94	.1472 -4	.1261 -2	.1167 -1	.1080	.3104 -2	.3857 -2	.9940	.988798
15 . 95	.1468 -4	.1258 -2	.1165 -1	.1079	.3107 -2	.3850 -2	.9940	.988799
15 . 96	.1464 -4	.1256 -2	.1164 -1	.1079	.3110 -2	.3843 -2	.9940	.988800
15 . 97	.1460 -4	.1254 -2	.1163 -1	.1078	.3113 -2	.3836 -2	.9940	.988801
15 . 98	.1456 -4	.1251 -2	.1162 -1	.1078	.3116 -2	.3829 -2	.9940	.988802
15 . 99	.1452 -4	.1249 -2	.1161 -1	.1077	.3119 -2	.3822 -2	.9940	.988803

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$\rho_2/\rho_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$m$
3.823	78.600	.4504	2.61.0	3.947	71.19	.5572-2	330.9	15.00
3.820	78.607	.4504	2.61.4	3.948	71.28	.5559-2	331.4	15.01
3.817	78.615	.4504	2.61.8	3.948	71.37	.5547-2	331.5	15.02
3.815	78.622	.4504	2.62.1	3.948	71.47	.5534-2	332.3	15.04
3.812	78.630	.4504	2.62.5	3.948	71.56	.5522-2	332.7	15.05
3.810	78.637	.4504	2.62.9	3.948	71.65	.5510-2	333.0	15.06
3.807	78.645	.4504	2.63.3	3.948	71.75	.5508-2	333.4	15.07
3.805	78.652	.4504	2.63.6	3.948	71.84	.5506-2	333.6	15.08
3.802	78.660	.4504	2.64.0	3.948	71.94	.5504-2	334.0	15.09
3.800	78.667	.4503	2.64.4	3.948	72.03	.5488-2	334.4	15.09
3.797	78.675	.4503	2.64.8	3.948	72.13	.5445-2	335.8	15.20
3.795	78.682	.4503	2.65.1	3.948	72.22	.5433-2	335.8	15.11
3.792	78.689	.4503	2.65.5	3.948	72.32	.5420-2	335.6	15.12
3.790	78.697	.4503	2.65.9	3.948	72.42	.5407-2	335.6	15.13
3.787	78.704	.4503	2.66.3	3.948	72.51	.5395-2	335.7	15.14
3.785	78.711	.4503	2.66.7	3.948	72.60	.5383-2	335.7	15.15
3.782	78.719	.4503	2.67.0	3.948	72.69	.5371-2	335.8	15.16
3.780	78.726	.4503	2.67.4	3.949	72.79	.5368-2	335.8	15.17
3.777	78.734	.4503	2.67.8	3.949	72.88	.5365-2	335.8	15.18
3.775	78.741	.4503	2.68.2	3.949	72.98	.5334-2	335.9	15.19
3.772	78.748	.4503	2.68.6	3.949	73.07	.5321-2	336.0	15.20
3.770	78.756	.4503	2.68.9	3.949	73.17	.5309-2	336.0	15.21
3.767	78.763	.4503	2.69.3	3.949	73.26	.5297-2	336.0	15.22
3.765	78.770	.4503	2.69.7	3.949	73.36	.5285-2	336.1	15.23
3.762	78.778	.4503	2.69.1	3.949	73.45	.5273-2	336.1	15.24
3.760	78.785	.4503	2.69.5	3.949	73.55	.5261-2	336.1	15.25
3.757	78.792	.4503	2.69.8	3.949	73.65	.5249-2	336.2	15.26
3.755	78.799	.4503	2.69.1	3.949	73.74	.5237-2	336.2	15.27
3.752	78.807	.4503	2.69.6	3.949	73.84	.5225-2	336.3	15.28
3.750	78.814	.4503	2.69.0	3.949	73.93	.5213-2	336.3	15.29
3.747	78.821	.4503	2.69.4	3.949	74.03	.5201-2	336.4	15.30
3.745	78.828	.4503	2.69.7	3.949	74.13	.5189-2	336.4	15.31
3.743	78.836	.4503	2.69.1	3.950	74.23	.5177-2	336.5	15.32
3.740	78.843	.4503	2.69.5	3.950	74.31	.5165-2	336.5	15.33
3.738	78.850	.4502	2.69.9	3.950	74.41	.5153-2	336.6	15.34
3.735	78.857	.4502	2.69.3	3.950	74.51	.5141-2	336.6	15.35
3.733	78.864	.4502	2.69.7	3.950	74.60	.5130-2	336.7	15.36
3.730	78.872	.4502	2.69.0	3.950	74.70	.5118-2	336.7	15.37
3.728	78.879	.4502	2.69.4	3.950	74.79	.5106-2	336.7	15.38
3.726	78.886	.4502	2.69.8	3.950	74.89	.5095-2	336.8	15.39
3.723	78.893	.4502	2.69.2	3.950	74.99	.5083-2	336.8	15.40
3.721	78.900	.4502	2.69.6	3.950	75.08	.5071-2	336.9	15.41
3.718	78.907	.4502	2.69.0	3.950	75.18	.5060-2	336.9	15.42
3.716	78.914	.4502	2.69.4	3.950	75.28	.5048-2	336.9	15.43
3.713	78.921	.4502	2.69.7	3.950	75.37	.5037-2	337.0	15.44
3.711	78.929	.4502	2.69.1	3.950	75.47	.5025-2	337.1	15.45
3.709	78.936	.4502	2.69.5	3.950	75.57	.5014-2	337.1	15.46
3.706	78.943	.4502	2.69.9	3.950	75.67	.5001-2	337.2	15.47
3.704	78.950	.4502	2.69.3	3.951	75.76	.4990-2	337.2	15.48
3.701	78.957	.4502	2.69.7	3.951	75.86	.4980-2	337.2	15.49
3.699	78.964	.4503	300.1	3.951	75.95	.5968-2	335.3	15.50
3.697	78.971	.4503	300.5	3.951	76.05	.5957-2	335.3	15.51
3.694	78.978	.4502	300.9	3.951	76.15	.5946-2	335.5	15.52
3.692	78.985	.4502	301.3	3.951	76.24	.5935-2	335.5	15.53
3.690	78.992	.4502	301.7	3.951	76.34	.5924-2	335.6	15.54
3.687	79.009	.4502	302.1	3.951	76.44	.5913-2	335.6	15.55
3.685	79.016	.4502	302.5	3.951	76.53	.5903-2	335.6	15.56
3.682	79.013	.4502	302.9	3.951	76.63	.5892-2	335.7	15.57
3.680	79.020	.4502	303.3	3.951	76.73	.5882-2	335.7	15.58
3.678	79.027	.4502	303.6	3.951	76.83	.5872-2	335.7	15.59
3.675	79.034	.4501	304.0	3.951	76.93	.5857-2	335.7	15.60
3.673	79.041	.4501	304.4	3.951	77.03	.5846-2	335.8	15.61
3.671	79.048	.4501	304.8	3.951	77.13	.5835-2	335.8	15.62
3.668	79.055	.4501	305.2	3.951	77.23	.5824-2	335.9	15.63
3.666	79.062	.4501	305.6	3.951	77.31	.5813-2	335.9	15.64
3.664	79.069	.4501	306.0	3.951	77.41	.5803-2	336.0	15.65
3.661	79.076	.4501	306.4	3.951	77.51	.5792-2	336.0	15.66
3.659	79.083	.4501	306.7	3.951	77.61	.5780-2	336.1	15.67
3.657	79.089	.4501	307.1	3.951	77.71	.5769-2	336.1	15.68
3.654	79.096	.4501	307.5	3.951	77.80	.5758-2	336.2	15.69
3.652	79.103	.4501	307.9	3.951	77.90	.5748-2	336.2	15.70
3.650	79.110	.4501	308.3	3.952	77.98	.5737-2	336.3	15.71
3.647	79.117	.4501	308.6	3.952	78.10	.5726-2	336.3	15.72
3.645	79.124	.4501	309.0	3.952	78.20	.5715-2	336.3	15.73
3.643	79.131	.4501	309.4	3.952	78.30	.5705-2	336.4	15.74
3.640	79.137	.4501	309.8	3.952	78.39	.5694-2	336.4	15.75
3.638	79.144	.4501	310.2	3.952	78.49	.5683-2	336.5	15.76
3.636	79.151	.4501	310.6	3.952	78.59	.5673-2	336.5	15.77
3.633	79.158	.4501	311.0	3.952	78.69	.5663-2	336.6	15.78
3.631	79.165	.4501	311.4	3.952	78.79	.5653-2	336.6	15.79
3.629	79.172	.4501	311.8	3.953	78.89	.5641-2	336.7	15.80
3.626	79.178	.4501	312.2	3.953	78.99	.5631-2	336.7	15.81
3.624	79.185	.4501	312.6	3.953	79.08	.5620-2	336.8	15.82
3.622	79.192	.4501	313.0	3.953	79.18	.5610-2	336.8	15.83
3.620	79.199	.4501	313.4	3.953	79.28	.5600-2	336.9	15.84
3.617	79.206	.4501	313.8	3.953	79.38	.5590-2	336.9	15.85
3.615	79.213	.4500	314.2	3.953	79.48	.5580-2	337.0	15.86
3.612	79.220	.4500	314.6	3.953	79.58	.5566-2	337.0	15.87
3.609	79.226	.4500	315.0	3.953	79.68	.5556-2	337.0	15.88
3.606	79.232	.4500	315.4	3.953	79.78	.5546-2	337.1	15.89
3.604	79.239	.4500	315.8	3.953	79.88	.5537-2	337.1	15.90
3.602	79.246	.4500	316.2	3.953	79.98	.5527-2	337.2	15.91
3.600	79.252	.4500	316.6	3.953	80.08	.5517-2	337.2	15.92
3.597	79.259	.4500	317.0	3.953	80.18	.5507-2	337.2	15.93
3.595	79.266	.4500	317.4	3.953	80.28	.5497-2	337.3	15.94
3.592	79.273	.4500	317.8	3.953	80.38	.5486-2	337.4	15.95
3.590	79.279	.4500	318.2	3.953	80.47	.5476-2	337.4	15.96
3.588	79.286	.4500	318.6	3.953	80.57	.5466-2	337.5	15.97
3.586	79.292	.4500	319.0	3.954	80.67	.5456-2	337.5	15.98
3.584	79.299	.4500	319.4	3.954	80.77	.5446-2	337.6	15.99

TABLE I.- VALUES FOR RATIOS OF

M	P/p <sub>t</sub>	P/p <sub>t</sub>	T/T <sub>t</sub>	s/a <sub>t</sub>	q/p <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/a <sup>*</sup>
16.00	.1444-4	.1247-2	.1158-1	.1076	.3080-2	.3816-2	.9942	1.988356
16.01	.1440-4	.1244-2	.1157-1	.1076	.3075-2	.3809-2	.9942	1.98840
16.03	.1435-4	.1240-2	.1154-1	.1074	.3064-2	.3795-2	.9942	1.98843
16.04	.1430-4	.1237-2	.1153-1	.1074	.3056-2	.3788-2	.9942	1.98844
16.05	.1428-4	.1235-2	.1150-1	.1073	.3048-2	.3781-2	.9942	1.98845
16.06	.1427-4	.1233-2	.1150-1	.1072	.3047-2	.3774-2	.9942	1.98847
16.07	.1426-4	.1231-2	.1149-1	.1071	.3041-2	.3767-2	.9942	1.98848
16.08	.1425-4	.1229-2	.1149-1	.1070	.3036-2	.3760-2	.9942	1.98849
16.09	.1424-4	.1228-2	.1148-1	.1070	.3030-2	.3754-2	.9942	1.98850
16.10	.1420-4	.1224-2	.1144-1	.1070	.3024-2	.3747-2	.9942	1.98851
16.11	.1396-4	.1223-2	.1143-1	.1069	.3019-2	.3740-2	.9942	1.98854
16.12	.1392-4	.1219-2	.1140-1	.1068	.3013-2	.3733-2	.9942	1.98855
16.13	.1387-4	.1216-2	.1139-1	.1068	.3008-2	.3726-2	.9942	1.98857
16.14	.1380-4	.1215-2	.1138-1	.1067	.3002-2	.3719-2	.9942	1.98858
16.15	.1375-4	.1210-2	.1136-1	.1066	.2996-2	.3713-2	.9942	1.98860
16.16	.1370-4	.1208-2	.1135-1	.1065	.2993-2	.3707-2	.9942	1.98862
16.17	.1370-4	.1208-2	.1135-1	.1065	.2998-2	.3700-2	.9942	1.98864
16.18	.1366-4	.1206-2	.1135-1	.1064	.2981-2	.3692-2	.9942	1.98865
16.19	.1362-4	.1204-2	.1132-1	.1064	.2975-2	.3685-2	.9942	1.98866
16.20	.1356-4	.1202-2	.1130-1	.1063	.2970-2	.3679-2	.9942	1.98867
16.21	.1352-4	.1199-2	.1128-1	.1062	.2965-2	.3672-2	.9942	1.98868
16.22	.1348-4	.1196-2	.1127-1	.1061	.2960-2	.3665-2	.9942	1.98869
16.23	.1344-4	.1193-2	.1126-1	.1061	.2954-2	.3658-2	.9942	1.98870
16.24	.1339-4	.1191-2	.1125-1	.1061	.2948-2	.3651-2	.9942	1.98871
16.25	.1337-4	.1190-2	.1124-1	.1060	.2943-2	.3645-2	.9942	1.98873
16.26	.1333-4	.1189-2	.1123-1	.1059	.2938-2	.3639-2	.9942	1.98875
16.27	.1330-4	.1186-2	.1122-1	.1059	.2932-2	.3632-2	.9942	1.98876
16.28	.1328-4	.1184-2	.1121-1	.1058	.2927-2	.3626-2	.9942	1.98878
16.29	.1324-4	.1182-2	.1119-1	.1057	.2922-2	.3619-2	.9942	1.98879
16.30	.1317-4	.1180-2	.1117-1	.1057	.2917-2	.3612-2	.9942	1.98880
16.31	.1313-4	.1178-2	.1115-1	.1056	.2911-2	.3606-2	.9942	1.98882
16.32	.1309-4	.1176-2	.1114-1	.1055	.2905-2	.3599-2	.9942	1.98883
16.33	.1305-4	.1173-2	.1112-1	.1055	.2900-2	.3593-2	.9942	1.98884
16.34	.1301-4	.1171-2	.1111-1	.1054	.2895-2	.3586-2	.9942	1.98885
16.35	.1297-4	.1169-2	.1110-1	.1053	.2890-2	.3580-2	.9942	1.98886
16.36	.1294-4	.1167-2	.1108-1	.1053	.2885-2	.3573-2	.9942	1.98888
16.37	.1290-4	.1165-2	.1106-1	.1052	.2880-2	.3567-2	.9942	1.98890
16.38	.1286-4	.1163-2	.1104-1	.1051	.2875-2	.3561-2	.9942	1.98891
16.39	.1282-4	.1161-2	.1104-1	.1051	.2870-2	.3554-2	.9942	1.98893
16.40	.1278-4	.1159-2	.1103-1	.1050	.2864-2	.3548-2	.9942	1.98894
16.41	.1274-4	.1156-2	.1102-1	.1050	.2859-2	.3541-2	.9942	1.98895
16.42	.1270-4	.1154-2	.1100-1	.1049	.2854-2	.3535-2	.9942	1.98897
16.43	.1267-4	.1152-2	.1099-1	.1048	.2848-2	.3529-2	.9942	1.98898
16.44	.1264-4	.1150-2	.1098-1	.1048	.2843-2	.3523-2	.9942	1.98899
16.45	.1260-4	.1148-2	.1096-1	.1047	.2837-2	.3516-2	.9942	1.98901
16.46	.1258-4	.1146-2	.1094-1	.1046	.2832-2	.3510-2	.9942	1.98903
16.47	.1254-4	.1144-2	.1093-1	.1045	.2827-2	.3504-2	.9942	1.98904
16.48	.1250-4	.1142-2	.1093-1	.1045	.2822-2	.3497-2	.9942	1.98906
16.49	.1244-4	.1140-2	.1091-1	.1045	.2819-2	.3491-2	.9942	1.98906
16.50	.1240-4	.1138-2	.1090-1	.1044	.2814-2	.3485-2	.9942	1.98907
16.51	.1235-4	.1136-2	.1089-1	.1043	.2809-2	.3478-2	.9942	1.98910
16.52	.1232-4	.1134-2	.1088-1	.1043	.2804-2	.3472-2	.9942	1.98911
16.53	.1229-4	.1132-2	.1086-1	.1042	.2801-2	.3466-2	.9942	1.98912
16.54	.1226-4	.1130-2	.1085-1	.1042	.2796-2	.3460-2	.9942	1.98914
16.55	.1223-4	.1128-2	.1083-1	.1041	.2792-2	.3454-2	.9942	1.98915
16.56	.1220-4	.1126-2	.1082-1	.1040	.2787-2	.3447-2	.9942	1.98916
16.57	.1218-4	.1124-2	.1081-1	.1039	.2783-2	.3441-2	.9942	1.98917
16.58	.1215-4	.1122-2	.1080-1	.1039	.2779-2	.3435-2	.9942	1.98918
16.59	.1212-4	.1120-2	.1078-1	.1038	.2775-2	.3430-2	.9942	1.98919
16.60	.1204-4	.1118-2	.1077-1	.1038	.2769-2	.3425-2	.9942	1.98920
16.61	.1200-4	.1116-2	.1076-1	.1037	.2764-2	.3421-2	.9942	1.98921
16.62	.1197-4	.1114-2	.1074-1	.1037	.2759-2	.3415-2	.9942	1.98924
16.63	.1193-4	.1112-2	.1073-1	.1036	.2754-2	.3409-2	.9942	1.98925
16.64	.1189-4	.1110-2	.1072-1	.1035	.2749-2	.3403-2	.9942	1.98927
16.65	.1186-4	.1108-2	.1071-1	.1035	.2744-2	.3397-2	.9942	1.98928
16.66	.1182-4	.1106-2	.1069-1	.1035	.2739-2	.3391-2	.9942	1.98929
16.67	.1179-4	.1104-2	.1068-1	.1035	.2734-2	.3385-2	.9942	1.98930
16.68	.1176-4	.1102-2	.1066-1	.1034	.2729-2	.3379-2	.9942	1.98932
16.69	.1173-4	.1100-2	.1065-1	.1034	.2724-2	.3373-2	.9942	1.98933
16.70	.1168-4	.1098-2	.1064-1	.1032	.2719-2	.3367-2	.9942	1.98933
16.71	.1165-4	.1096-2	.1063-1	.1031	.2714-2	.3361-2	.9942	1.98934
16.72	.1162-4	.1094-2	.1062-1	.1030	.2709-2	.3355-2	.9942	1.98935
16.73	.1159-4	.1092-2	.1060-1	.1030	.2704-2	.3349-2	.9942	1.98937
16.74	.1155-4	.1090-2	.1059-1	.1030	.2700-2	.3343-2	.9942	1.98938
16.75	.1152-4	.1088-2	.1058-1	.1029	.2695-2	.3337-2	.9942	1.98939
16.76	.1149-4	.1086-2	.1056-1	.1028	.2690-2	.3331-2	.9942	1.98940
16.77	.1146-4	.1083-2	.1054-1	.1027	.2685-2	.3325-2	.9942	1.98942
16.78	.1143-4	.1082-2	.1053-1	.1027	.2680-2	.3319-2	.9942	1.98943
16.79	.1139-4	.1081-2	.1053-1	.1026	.2675-2	.3313-2	.9942	1.98944
16.80	.1134-4	.1079-2	.1052-1	.1026	.2666-2	.3304-2	.9942	1.98945
16.81	.1131-4	.1077-2	.1051-1	.1025	.2661-2	.3300-2	.9942	1.98947
16.82	.1128-4	.1075-2	.1049-1	.1024	.2654-2	.3295-2	.9942	1.98948
16.83	.1125-4	.1073-2	.1048-1	.1023	.2649-2	.3289-2	.9942	1.98949
16.84	.1122-4	.1071-2	.1047-1	.1022	.2644-2	.3283-2	.9942	1.98950
16.85	.1119-4	.1069-2	.1046-1	.1021	.2639-2	.3277-2	.9942	1.98952
16.86	.1116-4	.1067-2	.1044-1	.1020	.2634-2	.3271-2	.9942	1.98953
16.87	.1113-4	.1065-2	.1043-1	.1020	.2629-2	.3265-2	.9942	1.98954
16.88	.1110-4	.1064-2	.1042-1	.1020	.2624-2	.3260-2	.9942	1.98955
16.89	.1108-4	.1063-2	.1041-1	.1020	.2620-2	.3255-2	.9942	1.98957
16.90	.1108-4	.1060-2	.1039-1	.1020	.2615-2	.3247-2	.9942	1.98958
16.91	.1099-5-4	.1059-2	.1038-1	.1019	.2610-2	.3241-2	.9942	1.98959
16.92	.1095-5-4	.1055-2	.1037-1	.1018	.2605-2	.3237-2	.9942	1.98960
16.93	.1090-5-4	.1053-2	.1036-1	.1018	.2600-2	.3233-2	.9942	1.98961
16.94	.1089-5-4	.1051-2	.1035-1	.1017	.2595-2	.3228-2	.9942	1.98963
16.95	.1086-5-4	.1049-2	.1034-1	.1016	.2590-2	.3218-2	.9942	1.98964
16.96	.1082-5-4	.1047-2	.1033-1	.1015	.2585-2	.3207-2	.9942	1.98965
16.97	.1079-5-4	.1044-2	.1031-1	.1015	.2580-2	.3191-2	.9942	1.98966
16.98	.1076-5-4	.1041-2	.1030-1	.1014	.2575-2	.3186-2	.9942	1.98967
16.99	.1073-5-4	.1039-2	.1029-1	.1014	.2570-2	.3181-2	.9942	1.98969

## FUNDAMENTAL FLOW EQUATIONS

$u$	$v$	$M_2$	$P_2/P_1$	$\rho_2/\rho_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
3-583	79-306	-4.500	3.19-8	3.954	80-87	.5436-2	376-5	16.00
3-581	79-318	-4.500	3.20-2	3.954	80-97	.5426-2	376-9	16.01
3-579	79-320	-4.500	3.20-6	3.954	81-07	.5416-2	377-4	16.02
3-577	79-325	-4.500	3.21-0	3.954	81-17	.5406-2	377-9	16.03
3-574	79-332	-4.500	3.21-4	3.954	81-27	.5396-2	378-4	16.04
3-572	79-339	-4.500	3.21-8	3.954	81-37	.5386-2	378-9	16.05
3-570	79-346	-4.500	3.22-2	3.954	81-47	.5376-2	379-3	16.06
3-568	79-352	-4.500	3.22-6	3.954	81-56	.5367-2	379-8	16.07
3-566	79-358	-4.500	3.23-0	3.954	81-66	.5357-2	380-2	16.08
3-564	79-365	-4.500	3.23-4	3.954	81-76	.5347-2	380-7	16.09
3-563	79-365	-4.500	3.23-8	3.954	81-86	.5337-2	381-2	16.10
3-561	79-371	-4.500	3.24-2	3.954	81-96	.5327-2	381-7	16.11
3-559	79-376	-4.500	3.24-6	3.954	82-06	.5316-2	382-1	16.12
3-557	79-385	-4.500	3.24-10	3.954	82-16	.5306-2	382-6	16.13
3-554	79-391	-4.500	3.25-4	3.954	82-26	.5296-2	383-1	16.14
3-552	79-396	-4.500	3.25-8	3.954	82-36	.5286-2	383-6	16.15
3-550	79-404	-4.499	3.26-2	3.955	82-46	.5276-2	384-1	16.16
3-548	79-411	-4.499	3.26-6	3.955	82-56	.5266-2	384-6	16.17
3-546	79-417	-4.499	3.27-0	3.955	82-66	.5256-2	385-0	16.18
3-544	79-424	-4.499	3.27-4	3.955	82-76	.5246-2	385-5	16.19
3-541	79-430	-4.499	3.27-8	3.955	82-86	.5236-2	386-0	16.20
3-539	79-437	-4.499	3.28-2	3.955	82-96	.5224-2	386-5	16.21
3-537	79-443	-4.499	3.28-6	3.955	82-99	.5214-2	387-0	16.22
3-535	79-450	-4.499	3.29-0	3.955	83-09	.5204-2	387-5	16.23
3-533	79-458	-4.499	3.29-4	3.955	83-19	.5194-2	388-0	16.24
3-532	79-462	-4.499	3.29-8	3.955	83-29	.5184-2	388-5	16.25
3-530	79-469	-4.499	3.30-2	3.955	83-39	.5174-2	389-0	16.26
3-528	79-475	-4.499	3.30-6	3.955	83-49	.5164-2	389-5	16.27
3-526	79-482	-4.499	3.31-0	3.955	83-59	.5154-2	390-0	16.28
3-524	79-488	-4.499	3.31-4	3.955	83-69	.5144-2	390-5	16.29
3-522	79-494	-4.499	3.31-8	3.955	83-79	.5134-2	391-0	16.30
3-519	79-501	-4.499	3.31-12	3.955	83-89	.5124-2	391-5	16.31
3-517	79-507	-4.499	3.32-6	3.955	84-09	.5114-2	392-0	16.32
3-515	79-514	-4.499	3.32-10	3.955	84-19	.5104-2	392-5	16.33
3-513	79-520	-4.499	3.33-4	3.955	84-29	.5094-2	393-0	16.34
3-510	79-526	-4.499	3.33-8	3.955	84-39	.5084-2	393-5	16.35
3-508	79-533	-4.499	3.34-2	3.955	84-49	.5074-2	394-0	16.36
3-504	79-539	-4.499	3.34-6	3.955	84-59	.5064-2	394-5	16.37
3-502	79-545	-4.499	3.34-10	3.955	84-69	.5054-2	395-0	16.38
3-498	79-552	-4.499	3.35-4	3.955	84-79	.5044-2	395-5	16.39
3-496	79-558	-4.499	3.35-8	3.955	84-89	.5034-2	396-0	16.40
3-494	79-564	-4.499	3.36-2	3.956	84-98	.5024-2	396-5	16.41
3-492	79-577	-4.499	3.36-6	3.956	85-08	.5014-2	397-0	16.42
3-489	79-583	-4.499	3.37-2	3.956	85-18	.5004-2	397-5	16.43
3-487	79-589	-4.499	3.37-6	3.956	85-28	.5004-2	398-0	16.44
3-485	79-596	-4.499	3.38-0	3.956	85-38	.5004-2	398-5	16.45
3-483	79-602	-4.498	3.38-4	3.956	85-48	.4994-2	399-0	16.46
3-481	79-608	-4.498	3.38-8	3.956	85-58	.4994-2	399-5	16.47
3-479	79-614	-4.498	3.39-2	3.956	85-68	.4984-2	400-0	16.48
3-477	79-621	-4.498	3.39-6	3.956	85-78	.4974-2	400-5	16.49
3-475	79-627	-4.498	3.40-1	3.956	85-88	.4964-2	400-10	16.50
3-472	79-633	-4.498	3.40-5	3.957	86-06	.4954-2	401-0	16.51
3-470	79-639	-4.498	3.40-9	3.957	86-16	.4944-2	401-5	16.52
3-468	79-646	-4.498	3.41-3	3.957	86-26	.4934-2	402-0	16.53
3-466	79-652	-4.498	3.41-7	3.957	86-36	.4924-2	402-5	16.54
3-464	79-658	-4.498	3.42-1	3.957	86-46	.4914-2	403-0	16.55
3-462	79-664	-4.498	3.42-5	3.957	86-56	.4904-2	403-5	16.56
3-460	79-670	-4.498	3.43-0	3.957	86-66	.4904-2	404-0	16.57
3-458	79-677	-4.498	3.43-4	3.957	86-76	.4894-2	404-5	16.58
3-456	79-683	-4.498	3.43-8	3.957	86-86	.4884-2	404-10	16.59
3-454	79-689	-4.498	3.44-2	3.957	86-96	.4877-2	405-0	16.60
3-452	79-695	-4.498	3.44-6	3.957	87-06	.4877-2	405-5	16.61
3-450	79-701	-4.498	3.44-10	3.957	87-16	.4867-2	406-0	16.62
3-448	79-713	-4.498	3.45-4	3.957	87-26	.4857-2	406-5	16.63
3-446	79-720	-4.498	3.45-8	3.957	87-36	.4847-2	407-0	16.64
3-444	79-726	-4.498	3.46-2	3.957	87-46	.4837-2	407-5	16.65
3-442	79-732	-4.498	3.47-1	3.957	87-56	.4827-2	408-0	16.66
3-439	79-738	-4.498	3.47-5	3.957	87-66	.4817-2	408-5	16.67
3-437	79-744	-4.498	3.47-9	3.957	87-76	.4807-2	409-0	16.68
3-435	79-750	-4.498	3.48-3	3.957	87-86	.4797-2	409-5	16.69
3-433	79-756	-4.498	3.48-7	3.957	88-03	.4792-2	410-1	16.70
3-431	79-762	-4.498	3.49-2	3.958	88-13	.4783-2	410-6	16.71
3-429	79-768	-4.498	3.49-6	3.958	88-24	.4773-2	411-1	16.72
3-427	79-774	-4.498	3.49-10	3.958	88-34	.4766-2	411-6	16.73
3-425	79-780	-4.498	3.50-0	3.958	88-45	.4758-2	412-1	16.74
3-421	79-787	-4.498	3.50-4	3.958	88-55	.4750-2	412-6	16.75
3-419	79-793	-4.498	3.50-8	3.958	88-65	.4741-2	413-0	16.76
3-417	79-799	-4.497	3.51-2	3.958	88-75	.4732-2	413-5	16.77
3-415	79-805	-4.497	3.51-6	3.958	88-85	.4716-2	414-0	16.78
3-412	79-811	-4.497	3.52-0	3.958	88-95	.4708-2	414-5	16.79
3-410	79-817	-4.497	3.53-4	3.958	89-07	.4700-2	415-0	16.80
3-408	79-823	-4.497	3.53-8	3.958	89-18	.4692-2	416-0	16.81
3-406	79-835	-4.497	3.54-2	3.958	89-29	.4683-2	416-5	16.82
3-404	79-841	-4.497	3.54-6	3.958	89-40	.4675-2	417-0	16.83
3-402	79-847	-4.497	3.54-10	3.958	89-50	.4667-2	417-5	16.84
3-400	79-853	-4.497	3.55-4	3.958	89-61	.4659-2	418-0	16.85
3-398	79-859	-4.497	3.55-8	3.958	89-81	.4651-2	418-5	16.86
3-396	79-864	-4.497	3.56-2	3.958	89-92	.4643-2	419-0	16.87
3-394	79-864	-4.497	3.56-6	3.958	89-08	.4634-2	419-5	16.88
3-392	79-870	-4.497	3.56-10	3.958	89-07	.4626-2	420-0	16.89
3-390	79-876	-4.497	3.57-2	3.958	89-23	.4618-2	420-5	16.91
3-388	79-882	-4.497	3.57-6	3.959	89-39	.4610-2	421-0	16.92
3-386	79-888	-4.497	3.58-0	3.959	89-55	.4602-2	421-5	16.93
3-384	79-894	-4.497	3.58-4	3.959	89-71	.4594-2	422-0	16.94
3-382	79-900	-4.497	3.58-8	3.959	89-86	.4586-2	422-4	16.95
3-380	79-906	-4.497	3.59-2	3.959	89-76	.4578-2	422-9	16.96
3-378	79-912	-4.497	3.59-6	3.959	89-87	.4570-2	423-4	16.97
3-376	79-918	-4.497	3.59-10	3.959	89-97	.4562-2	423-9	16.98
3-374	79-924	-4.497	3.60-6	3.959	91-08	.4554-2	424-4	16.99

TABLE I - VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	R/R <sub>t</sub>	Q/Q <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/R <sup>*</sup>
17.00	.1070-4	.1041-2	.1027-1	.1014	.2577-2	.3190-2	.9948	1.98970
17.01	.1067-4	.1040-2	.1025-1	.1013	.2579-2	.3185-2	.9949	1.98971
17.02	.1064-4	.1036-2	.1024-1	.1012	.2580-2	.3179-2	.9949	1.98972
17.03	.1058-4	.1034-2	.1023-1	.1011	.2581-2	.3173-2	.9949	1.98974
17.04	.1054-4	.1032-2	.1021-1	.1011	.2582-2	.3168-2	.9949	1.98975
17.05	.1051-4	.1031-2	.1020-1	.1010	.2583-2	.3163-2	.9949	1.98977
17.06	.1047-4	.1029-2	.1019-1	.1009	.2584-2	.3158-2	.9949	1.98978
17.07	.1045-4	.1027-2	.1018-1	.1009	.2585-2	.3153-2	.9949	1.98979
17.08	.1042-4	.1025-2	.1017-1	.1008	.2586-2	.3148-2	.9949	1.98980
17.09	.1040-4	.1025-2	.1017-1	.1008	.2587-2	.3144-2	.9949	1.98981
17.10	.1037-4	.1023-2	.1016-1	.1008	.2588-2	.3135-2	.9949	1.98982
17.11	.1035-4	.1020-2	.1014-1	.1007	.2589-2	.3130-2	.9949	1.98983
17.12	.1033-4	.1018-2	.1013-1	.1006	.2590-2	.3121-2	.9949	1.98984
17.13	.1030-4	.1016-2	.1011-1	.1005	.2591-2	.3119-2	.9949	1.98985
17.14	.1028-4	.1015-2	.1011-1	.1005	.2592-2	.3118-2	.9949	1.98987
17.15	.1026-4	.1015-2	.1010-1	.1004	.2593-2	.3117-2	.9949	1.98988
17.16	.1024-4	.1014-2	.1009-1	.1004	.2594-2	.3116-2	.9949	1.98989
17.17	.1021-4	.1014-2	.1007-1	.1004	.2595-2	.3115-2	.9949	1.98990
17.18	.1019-4	.1009-2	.1005-1	.1003	.2596-2	.3114-2	.9949	1.98991
17.19	.1013-4	.1006-2	.1005-1	.1003	.2597-2	.3113-2	.9950	1.98992
17.20	.1010-4	.1006-2	.1004-1	.1002	.2598-2	.3112-2	.9950	1.98994
17.21	.1007-4	.1004-2	.1003-1	.1001	.2599-2	.3111-2	.9950	1.98995
17.22	.1004-4	.1003-2	.1002-1	.1001	.2600-2	.3110-2	.9950	1.98996
17.23	.1001-4	.1002-2	.1001-1	.1000	.2601-2	.3109-2	.9950	1.98997
17.24	.9998-5	.9997-5	.9996-1	.9996	.2602-2	.3108-2	.9950	1.98998
17.25	.9995-5	.9995-5	.9994-1	.9994	.2603-2	.3107-2	.9950	1.98999
17.26	.9995-5	.9995-5	.9995-1	.9995	.2604-2	.3106-2	.9950	1.99000
17.27	.9989-5	.9988-5	.9987-1	.9987	.2605-2	.3105-2	.9950	1.99002
17.28	.9986-5	.9986-5	.9987-1	.9987	.2606-2	.3104-2	.9950	1.99003
17.29	.9984-5	.9984-5	.9986-1	.9986	.2607-2	.3103-2	.9950	1.99004
17.30	.9981-5	.9981-5	.9983-1	.9983	.2608-2	.3102-2	.9950	1.99005
17.31	.9978-5	.9978-5	.9980-1	.9980	.2609-2	.3101-2	.9950	1.99006
17.32	.9975-5	.9975-5	.9979-1	.9979	.2610-2	.3100-2	.9950	1.99007
17.33	.9972-5	.9972-5	.9976-1	.9976	.2611-2	.3099-2	.9950	1.99009
17.34	.9970-5	.9970-5	.9978-1	.9978	.2612-2	.3098-2	.9950	1.99010
17.35	.9967-5	.9967-5	.9979-1	.9979	.2613-2	.3097-2	.9951	1.99011
17.36	.9964-5	.9964-5	.9980-1	.9980	.2614-2	.3096-2	.9951	1.99012
17.37	.9961-5	.9961-5	.9981-1	.9981	.2615-2	.3095-2	.9951	1.99013
17.38	.9959-5	.9959-5	.9982-1	.9982	.2616-2	.3094-2	.9951	1.99014
17.39	.9956-5	.9956-5	.9983-1	.9983	.2617-2	.3093-2	.9951	1.99015
17.40	.9953-5	.9953-5	.9984-1	.9984	.2618-2	.3092-2	.9951	1.99016
17.41	.9950-5	.9950-5	.9985-1	.9985	.2619-2	.3091-2	.9951	1.99018
17.42	.9948-5	.9948-5	.9986-1	.9986	.2620-2	.3090-2	.9951	1.99019
17.43	.9945-5	.9945-5	.9987-1	.9987	.2621-2	.3089-2	.9951	1.99020
17.44	.9943-5	.9943-5	.9987-1	.9987	.2622-2	.3088-2	.9951	1.99021
17.45	.9940-5	.9940-5	.9988-1	.9988	.2623-2	.3087-2	.9951	1.99022
17.46	.9938-5	.9938-5	.9988-1	.9988	.2624-2	.3086-2	.9951	1.99023
17.47	.9936-5	.9936-5	.9989-1	.9989	.2625-2	.3085-2	.9951	1.99024
17.48	.9933-5	.9933-5	.9989-1	.9989	.2626-2	.3084-2	.9951	1.99025
17.49	.9930-5	.9930-5	.9971-1	.9971	.2627-2	.3083-2	.9951	1.99026
17.50	.9929-5	.9929-5	.9970-1	.9970	.2628-2	.3082-2	.9951	1.99028
17.51	.9928-5	.9928-5	.9969-1	.9969	.2629-2	.3081-2	.9951	1.99029
17.52	.9927-5	.9927-5	.9968-1	.9968	.2630-2	.3080-2	.9952	1.99030
17.53	.9925-5	.9925-5	.9967-1	.9967	.2631-2	.3079-2	.9952	1.99031
17.54	.9923-5	.9923-5	.9966-1	.9966	.2632-2	.3078-2	.9952	1.99032
17.55	.9921-5	.9921-5	.9965-1	.9965	.2633-2	.3077-2	.9952	1.99033
17.56	.9919-5	.9919-5	.9964-1	.9964	.2634-2	.3076-2	.9952	1.99034
17.57	.9917-5	.9917-5	.9963-1	.9963	.2635-2	.3075-2	.9952	1.99035
17.58	.9908-5	.9908-5	.9962-1	.9962	.2636-2	.3074-2	.9952	1.99036
17.59	.9906-5	.9906-5	.9961-1	.9961	.2637-2	.3073-2	.9952	1.99037
17.60	.9011-5	.9954-3	.9952-2	.9952	.2638-2	.3072-2	.9952	1.99038
17.61	.8996-5	.9952-3	.9951-2	.9951	.2639-2	.3071-2	.9952	1.99040
17.62	.8991-5	.9953-3	.9950-2	.9950	.2640-2	.3070-2	.9952	1.99041
17.63	.8987-5	.9954-3	.9949-2	.9949	.2641-2	.3069-2	.9952	1.99042
17.64	.8982-5	.9954-3	.9948-2	.9948	.2642-2	.3068-2	.9952	1.99043
17.65	.8988-5	.9951-3	.9945-2	.9945	.2643-2	.3067-2	.9952	1.99044
17.66	.8985-5	.9950-3	.9945-2	.9945	.2644-2	.3066-2	.9952	1.99045
17.67	.8983-5	.9950-3	.9947-2	.9947	.2645-2	.3065-2	.9952	1.99046
17.68	.8981-5	.9950-3	.9947-2	.9947	.2646-2	.3064-2	.9952	1.99047
17.69	.8978-5	.9949-3	.9946-2	.9946	.2647-2	.3063-2	.9952	1.99048
17.70	.8762-5	.9237-3	.9465-2	.9739-1	.2648-2	.3062-2	.9952	1.99049
17.71	.8773-5	.9228-3	.9464-2	.9738-1	.2649-2	.3061-2	.9952	1.99050
17.72	.8773-5	.9219-3	.9464-2	.9738-1	.2650-2	.3060-2	.9952	1.99051
17.73	.8689-5	.9219-3	.9453-2	.9723-1	.2651-2	.3059-2	.9952	1.99052
17.74	.8664-5	.9176-1	.9443-2	.9717-1	.2652-2	.3058-2	.9952	1.99053
17.75	.8650-5	.9176-1	.9432-2	.9718-1	.2653-2	.3057-2	.9952	1.99054
17.76	.8652-5	.9130-1	.9412-2	.9703-1	.2654-2	.3056-2	.9952	1.99055
17.77	.8659-5	.9130-1	.9401-2	.9703-1	.2655-2	.3055-2	.9952	1.99056
17.78	.8557-5	.9130-1	.9390-2	.9696-1	.2656-2	.3054-2	.9952	1.99057
17.79	.8544-5	.9099-1	.9390-2	.9696-1	.2657-2	.3053-2	.9952	1.99058
17.80	.8521-5	.9084-1	.9389-2	.9685-1	.2658-2	.3052-2	.9953	1.99060
17.81	.8497-5	.9065-1	.9359-2	.9679-1	.2659-2	.3051-2	.9953	1.99061
17.82	.8475-5	.9059-1	.9359-2	.9679-1	.2660-2	.3050-2	.9953	1.99062
17.83	.8454-5	.9059-1	.9358-2	.9678-1	.2661-2	.3049-2	.9953	1.99063
17.84	.8403-5	.9006-1	.9328-2	.9655-1	.2662-2	.3048-2	.9953	1.99064
17.85	.8366-5	.8999-1	.9317-2	.9655-1	.2663-2	.3047-2	.9953	1.99065
17.86	.8357-5	.8979-1	.9307-2	.9647-1	.2664-2	.3046-2	.9953	1.99066
17.87	.8333-5	.8964-1	.9297-2	.9647-1	.2665-2	.3045-2	.9953	1.99067
17.88	.8316-5	.8949-1	.9286-2	.9637-1	.2666-2	.3044-2	.9953	1.99068
17.89	.8304-5	.8880-3	.9184-2	.9586-1	.2667-2	.3043-2	.9953	1.99069
17.90	.8267-5	.8934-3	.9276-2	.9631-1	.2668-2	.3042-2	.9954	1.99070
17.91	.8265-5	.8919-3	.9266-2	.9631-1	.2669-2	.3041-2	.9954	1.99071
17.92	.8239-5	.8895-3	.9255-2	.9618-1	.2670-2	.3040-2	.9954	1.99072
17.93	.8219-5	.8875-3	.9235-2	.9618-1	.2671-2	.3039-2	.9954	1.99073
17.94	.8195-5	.8851-3	.9225-2	.9618-1	.2672-2	.3038-2	.9954	1.99074
17.95	.8151-5	.8846-3	.9215-2	.9599-1	.2673-2	.3037-2	.9954	1.99075
17.96	.8129-5	.8831-3	.9205-2	.9599-1	.2674-2	.3036-2	.9954	1.99076
17.97	.8106-5	.8816-3	.9195-2	.9589-1	.2675-2	.3035-2	.9954	1.99077
17.98	.8084-5	.8808-3	.9184-2	.9589-1	.2676-2	.3034-2	.9954	1.99078
17.99	.8064-5	.8808-3	.9184-2	.9589-1	.2677-2	.3033-2	.9954	1.99079

## FUNDAMENTAL FLOW EQUATIONS

M	V	M <sub>2</sub>	P <sub>2</sub> /P <sub>1</sub>	P <sub>2</sub> /P <sub>1</sub>	T <sub>2</sub> /T <sub>1</sub>	P <sub>t,2</sub> /P <sub>t,1</sub>	P <sub>t,2</sub> /P <sub>1</sub>	M
.372	79.930	4497	61.0	3.959	91.19	4.546-2	424.9	17.010
.370	79.935	4497	61.4	3.959	91.29	4.539-2	425.4	17.012
.368	79.941	4497	61.9	3.959	91.40	4.531-2	425.9	17.014
.366	79.947	4497	62.3	3.959	91.51	4.523-2	426.4	17.016
.364	79.953	4497	62.7	3.959	91.61	4.515-2	426.9	17.018
.362	79.959	4497	63.1	3.959	91.72	4.507-2	427.4	17.020
.360	79.965	4497	63.6	3.959	91.83	4.599-2	427.9	17.022
.358	79.971	4497	64.0	3.959	91.93	4.492-2	428.4	17.024
.356	79.976	4497	64.4	3.959	92.04	4.484-2	428.9	17.026
.355	79.982	4497	64.8	3.959	92.15	4.476-2	429.4	17.028
.353	79.988	4497	65.3	3.959	92.25	4.468-2	430.0	17.10
.351	79.994	4497	65.7	3.959	92.36	4.461-2	430.5	17.11
.349	80.000	4496	66.1	3.959	92.47	4.453-2	431.0	17.12
.347	80.005	4496	66.5	3.960	92.57	4.445-2	431.5	17.13
.345	80.011	4496	67.0	3.960	92.68	4.338-2	432.0	17.14
.343	80.017	4496	67.4	3.960	92.79	4.331-2	432.5	17.15
.341	80.023	4496	67.8	3.960	92.89	4.323-2	433.0	17.16
.339	80.028	4496	68.3	3.960	93.00	4.315-2	433.5	17.17
.337	80.034	4496	68.7	3.960	93.11	4.307-2	434.0	17.18
.335	80.040	4496	69.1	3.960	93.22	4.400-2	434.5	17.19
.333	80.046	4496	69.6	3.960	93.38	4.392-2	435.0	17.20
.331	80.051	4496	70.0	3.960	93.53	4.385-2	435.5	17.21
.329	80.057	4496	70.4	3.960	93.68	4.378-2	436.0	17.22
.327	80.063	4496	70.8	3.960	93.83	4.370-2	436.5	17.23
.325	80.069	4496	71.3	3.960	93.95	4.362-2	437.0	17.24
.323	80.074	4496	71.7	3.960	94.06	4.355-2	437.5	17.25
.321	80.080	4496	72.1	3.960	94.17	4.347-2	438.0	17.26
.320	80.086	4496	72.6	3.960	94.08	4.340-2	438.5	17.27
.318	80.091	4496	73.0	3.960	94.19	4.332-2	439.0	17.28
.316	80.097	4496	73.4	3.960	94.29	4.325-2	439.5	17.29
.314	80.103	4496	73.9	3.960	94.40	4.318-2	440.0	17.30
.312	80.108	4496	74.3	3.960	94.51	4.310-2	440.5	17.31
.310	80.114	4496	74.7	3.960	94.62	4.303-2	441.0	17.32
.308	80.120	4496	75.2	3.960	94.73	4.296-2	441.5	17.33
.306	80.125	4496	75.6	3.960	94.84	4.288-2	442.0	17.34
.304	80.131	4496	76.0	3.961	94.94	4.281-2	442.5	17.35
.302	80.137	4496	76.5	3.961	95.05	4.274-2	443.0	17.36
.300	80.142	4496	76.9	3.961	95.16	4.267-2	443.5	17.37
.298	80.148	4496	77.3	3.961	95.27	4.259-2	444.0	17.38
.297	80.154	4496	77.8	3.961	95.38	4.252-2	444.5	17.39
.295	80.159	4496	78.2	3.961	95.49	4.245-2	445.0	17.40
.293	80.165	4496	78.6	3.961	95.60	4.238-2	445.5	17.41
.291	80.170	4496	79.1	3.961	95.70	4.230-2	446.0	17.42
.289	80.176	4496	79.5	3.961	95.81	4.223-2	446.5	17.43
.287	80.182	4496	79.9	3.961	95.92	4.216-2	447.0	17.44
.285	80.187	4496	80.4	3.961	96.03	4.209-2	447.5	17.45
.283	80.193	4496	80.8	3.961	96.14	4.202-2	448.0	17.46
.281	80.198	4496	81.2	3.961	96.25	4.195-2	448.5	17.47
.278	80.210	4496	81.6	3.961	96.36	4.188-2	449.0	17.48
.276	80.215	4495	82.0	3.961	96.47	4.181-2	449.5	17.49
.274	80.221	4495	82.4	3.961	96.58	4.174-2	450.0	17.50
.272	80.226	4495	82.8	3.961	96.69	4.167-2	450.5	17.51
.270	80.232	4495	83.2	3.961	96.80	4.160-2	451.0	17.52
.268	80.237	4495	83.6	3.961	96.91	4.153-2	451.5	17.53
.266	80.243	4495	84.0	3.961	97.02	4.146-2	452.0	17.54
.263	80.248	4495	84.4	3.961	97.13	4.139-2	452.5	17.55
.261	80.254	4495	84.8	3.961	97.25	4.132-2	453.0	17.56
.259	80.265	4495	85.2	3.961	97.36	4.125-2	453.5	17.57
.257	80.270	4495	85.6	3.961	97.47	4.118-2	454.0	17.58
.255	80.276	4495	86.0	3.961	97.58	4.111-2	454.5	17.59
.253	80.281	4495	86.4	3.962	97.69	4.104-2	455.0	17.60
.252	80.287	4495	86.8	3.962	97.78	4.097-2	455.5	17.61
.250	80.292	4495	87.2	3.962	97.89	4.090-2	456.0	17.62
.248	80.298	4495	87.6	3.962	97.99	4.083-2	456.5	17.63
.246	80.303	4495	88.0	3.962	98.10	4.077-2	457.0	17.64
.244	80.309	4495	88.4	3.962	98.21	4.070-2	457.5	17.65
.242	80.314	4495	89.0	3.962	98.45	4.063-2	458.0	17.66
.241	80.319	4495	89.6	3.962	98.56	4.049-2	459.1	17.67
.239	80.325	4495	91.4	3.962	98.78	4.036-2	460.6	17.70
.235	80.330	4495	92.8	3.962	99.00	4.029-2	461.1	17.71
.233	80.341	4495	93.2	3.962	99.21	4.022-2	461.7	17.72
.231	80.346	4495	93.6	3.962	99.42	4.015-2	462.2	17.73
.230	80.352	4495	94.0	3.962	99.63	4.008-2	462.7	17.74
.228	80.357	4495	94.4	3.962	99.84	4.002-2	463.2	17.75
.226	80.363	4495	94.8	3.962	99.55	4.002-2	463.7	17.76
.224	80.368	4495	95.2	3.962	99.66	4.002-2	464.2	17.77
.222	80.373	4495	95.6	3.962	99.78	4.002-2	464.8	17.78
.221	80.379	4495	96.0	3.962	99.89	4.002-2	465.3	17.79
.220	80.384	4495	96.4	3.963	100.00	4.002-2	465.8	17.80
.217	80.389	4495	96.7	3.963	100.11	4.002-2	466.4	17.81
.215	80.395	4495	97.1	3.963	100.32	4.002-2	466.9	17.82
.213	80.400	4495	97.6	3.963	100.53	4.002-2	467.4	17.83
.212	80.406	4495	98.0	3.963	100.74	4.002-2	467.9	17.84
.210	80.411	4495	98.5	3.963	100.95	4.002-2	468.5	17.85
.208	80.416	4495	98.9	3.963	100.77	4.002-2	469.0	17.86
.206	80.422	4495	99.4	3.963	100.88	4.002-2	469.5	17.87
.204	80.427	4495	99.8	3.963	100.99	4.002-2	470.0	17.88
.203	80.432	4494	100.3	3.963	101.00	4.002-2	471.1	17.90
.201	80.437	4494	100.7	3.963	101.11	4.002-2	471.6	17.91
.199	80.443	4494	101.2	3.963	101.32	4.002-2	472.1	17.92
.197	80.448	4494	101.6	3.963	101.33	4.002-2	472.6	17.93
.195	80.453	4494	102.1	3.963	101.55	4.002-2	473.2	17.94
.194	80.459	4494	102.5	3.963	101.55	4.002-2	473.7	17.95
.192	80.464	4494	103.0	3.963	101.77	4.002-2	474.2	17.96
.190	80.469	4494	103.4	3.963	101.88	4.002-2	474.8	17.97
.188	80.474	4494	103.8	3.963	102.09	4.002-2	475.3	17.98
.187	80.480	4494	104.4	3.963	102.00	4.002-2	475.8	17.99

TABLE I. - VALUES FOR RATIOS OF

M	P/P <sub>L</sub>	P/P <sub>L</sub>	T/T <sub>L</sub>	s/s <sub>L</sub>	q/P <sub>L</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/v <sup>*</sup>
18.00	.8062-5	.8787-3	.9174-2	.9576-1	.2177-2	.2693-8	.9954	1.99080
18.01	.8046-5	.8772-3	.9164-2	.9573-1	.2173-2	.2689-8	.9954	1.99081
18.02	.8030-5	.8757-3	.9154-2	.9569-1	.2169-2	.2685-8	.9954	1.99082
18.03	.8015-5	.8742-3	.9144-2	.9565-1	.2165-2	.2680-8	.9954	1.99083
18.04	.7974-5	.8727-3	.9134-2	.9557-1	.2162-2	.2676-8	.9954	1.99084
18.05	.7952-5	.8712-3	.9124-2	.9552-1	.2159-2	.2671-2	.9954	1.99085
18.06	.7930-5	.8707-3	.9114-2	.9547-1	.2155-2	.2667-2	.9954	1.99086
18.07	.7908-5	.8697-3	.9104-2	.9541-1	.2151-2	.2663-2	.9954	1.99087
18.08	.7887-5	.8687-3	.9094-2	.9536-1	.2148-2	.2659-2	.9954	1.99088
18.09	.7865-5	.8658-3	.9084-2	.9531-1	.2145-2	.2654-2	.9954	1.99089
18.10	.7844-5	.8630-3	.9074-2	.9525-1	.2141-2	.2650-2	.9955	1.99091
18.11	.7822-5	.8615-3	.9064-2	.9521-1	.2138-2	.2645-2	.9955	1.99092
18.12	.7801-5	.8601-3	.9054-2	.9515-1	.2134-2	.2640-2	.9955	1.99093
18.13	.7779-5	.8586-3	.9044-2	.9510-1	.2131-2	.2637-2	.9955	1.99094
18.14	.7758-5	.8573-3	.9035-2	.9505-1	.2127-2	.2632-2	.9955	1.99095
18.15	.7737-5	.8557-3	.9025-2	.9500-1	.2124-2	.2628-2	.9955	1.99096
18.16	.7716-5	.8539-3	.9015-2	.9495-1	.2121-2	.2624-2	.9955	1.99097
18.17	.7695-5	.8524-3	.9005-2	.9490-1	.2117-2	.2619-2	.9955	1.99098
18.18	.7674-5	.8505-3	.8995-2	.9485-1	.2114-2	.2615-2	.9955	1.99099
18.19	.7653-5	.8517-3	.8985-2	.9479-1	.2110-2	.2611-2	.9955	1.99099
18.20	.7632-5	.8503-3	.8976-2	.9474-1	.2107-2	.2607-2	.9955	1.99100
18.21	.7612-5	.8490-3	.8966-2	.9464-1	.2104-2	.2602-2	.9955	1.99101
18.22	.7591-5	.8476-3	.8956-2	.9454-1	.2100-2	.2598-2	.9955	1.99102
18.23	.7570-5	.8462-3	.8946-2	.9449-1	.2097-2	.2594-2	.9955	1.99103
18.24	.7550-5	.8448-3	.8937-2	.9443-1	.2093-2	.2590-2	.9955	1.99104
18.25	.7529-5	.8434-3	.8928-2	.9436-1	.2089-2	.2586-2	.9955	1.99105
18.26	.7509-5	.8420-3	.8920-2	.9430-1	.2085-2	.2582-2	.9955	1.99106
18.27	.7489-5	.8407-3	.8908-2	.9424-1	.2081-2	.2578-2	.9955	1.99107
18.28	.7468-5	.8392-3	.8898-2	.9418-1	.2078-2	.2574-2	.9955	1.99108
18.29	.7448-5	.8380-3	.8888-2	.9412-1	.2076-2	.2570-2	.9955	1.99109
18.30	.7428-5	.8366-3	.8879-2	.9407-1	.2073-2	.2566-2	.9956	1.99110
18.31	.7408-5	.8352-3	.8869-2	.9402-1	.2070-2	.2562-2	.9956	1.99111
18.32	.7389-5	.8338-3	.8859-2	.9397-1	.2066-2	.2558-2	.9956	1.99112
18.33	.7370-5	.8324-3	.8850-2	.9392-1	.2062-2	.2554-2	.9956	1.99113
18.34	.7348-5	.8310-3	.8840-2	.9387-1	.2058-2	.2550-2	.9956	1.99114
18.35	.7328-5	.8301-3	.8831-2	.9382-1	.2054-2	.2546-2	.9956	1.99115
18.36	.7308-5	.8285-3	.8821-2	.9378-1	.2050-2	.2542-2	.9956	1.99116
18.37	.7289-5	.8272-3	.8812-2	.9374-1	.2046-2	.2538-2	.9956	1.99117
18.38	.7269-5	.8258-3	.8803-2	.9370-1	.2043-2	.2534-2	.9956	1.99118
18.39	.7249-5	.8245-3	.8797-2	.9367-1	.2040-2	.2530-2	.9956	1.99119
18.40	.7230-5	.8232-3	.8783-2	.9363-1	.2037-2	.2526-2	.9956	1.99120
18.41	.7211-5	.8218-3	.8774-2	.9357-1	.2034-2	.2522-2	.9956	1.99121
18.42	.7191-5	.8205-3	.8764-2	.9352-1	.2031-2	.2518-2	.9956	1.99122
18.43	.7172-5	.8192-3	.8755-2	.9347-1	.2028-2	.2514-2	.9956	1.99123
18.44	.7153-5	.8179-3	.8745-2	.9342-1	.2025-2	.2510-2	.9956	1.99124
18.45	.7133-5	.8165-3	.8736-2	.9337-1	.2022-2	.2506-2	.9956	1.99125
18.46	.7114-5	.8154-3	.8727-2	.9332-1	.2020-2	.2502-2	.9956	1.99126
18.47	.7095-5	.8139-3	.8717-2	.9327-1	.2017-2	.2498-2	.9956	1.99127
18.48	.7076-5	.8126-3	.8708-2	.9322-1	.2014-2	.2494-2	.9956	1.99128
18.49	.7057-5	.8113-3	.8699-2	.9317-1	.2011-2	.2490-2	.9956	1.99129
18.50	.7038-5	.8100-3	.8689-2	.9312-1	.2007-2	.2486-2	.9956	1.99130
18.51	.7019-5	.8097-3	.8680-2	.9307-1	.2004-2	.2482-2	.9957	1.99131
18.52	.7001-5	.8084-3	.8667-2	.9302-1	.2001-2	.2478-2	.9957	1.99132
18.53	.6982-5	.8071-3	.8661-2	.9307-1	.1998-2	.2474-2	.9957	1.99133
18.54	.6963-5	.8058-3	.8655-2	.9298-1	.1995-2	.2467-2	.9957	1.99134
18.55	.6945-5	.8045-3	.8650-2	.9293-1	.1992-2	.2463-2	.9957	1.99135
18.56	.6927-5	.8032-3	.8645-2	.9288-1	.1990-2	.2459-2	.9957	1.99136
18.57	.6909-5	.8020-3	.8638-2	.9283-1	.1986-2	.2456-2	.9957	1.99137
18.58	.6889-5	.7997-3	.8628-2	.9278-1	.1982-2	.2452-2	.9957	1.99138
18.59	.6871-5	.7984-3	.8606-2	.9277-1	.1979-2	.2448-2	.9957	1.99139
18.60	.6853-5	.7971-3	.8597-2	.9272-1	.1975-2	.2444-2	.9957	1.99140
18.61	.6835-5	.7959-3	.8586-2	.9267-1	.1971-2	.2440-2	.9957	1.99141
18.62	.6816-5	.7946-3	.8576-2	.9262-1	.1967-2	.2436-2	.9957	1.99142
18.63	.6798-5	.7934-3	.8566-2	.9257-1	.1963-2	.2432-2	.9957	1.99143
18.64	.6780-5	.7920-3	.8556-2	.9252-1	.1959-2	.2428-2	.9957	1.99144
18.65	.6762-5	.7908-3	.8545-2	.9247-1	.1956-2	.2425-2	.9957	1.99145
18.66	.6744-5	.7895-3	.8534-2	.9242-1	.1953-2	.2421-2	.9957	1.99146
18.67	.6726-5	.7882-3	.8524-2	.9238-1	.1950-2	.2417-2	.9957	1.99147
18.68	.6708-5	.7870-3	.8514-2	.9233-1	.1945-2	.2413-2	.9957	1.99148
18.69	.6691-5	.7857-3	.8505-2	.9228-1	.1940-2	.2409-2	.9957	1.99149
18.70	.6673-5	.7845-3	.8496-2	.9223-1	.1945-2	.2405-2	.9957	1.99148
18.71	.6655-5	.7832-3	.8487-2	.9218-1	.1941-2	.2402-2	.9957	1.99149
18.72	.6638-5	.7820-3	.8478-2	.9213-1	.1938-2	.2398-2	.9957	1.99150
18.73	.6620-5	.7808-3	.8469-2	.9208-1	.1935-2	.2394-2	.9957	1.99151
18.74	.6603-5	.7795-3	.8460-2	.9203-1	.1932-2	.2390-2	.9957	1.99152
18.75	.6585-5	.7783-3	.8451-2	.9198-1	.1929-2	.2386-2	.9957	1.99153
18.76	.6567-5	.7771-3	.8442-2	.9193-1	.1926-2	.2383-2	.9957	1.99154
18.77	.6550-5	.7759-3	.8433-2	.9189-1	.1923-2	.2379-2	.9957	1.99155
18.78	.6533-5	.7746-3	.8424-2	.9184-1	.1919-2	.2375-2	.9957	1.99156
18.79	.6516-5	.7734-3	.8414-2	.9179-1	.1917-2	.2371-2	.9957	1.99157
18.80	.6499-5	.7722-3	.8405-2	.9174-1	.1914-2	.2368-2	.9957	1.99158
18.81	.6485-5	.7709-3	.8396-2	.9169-1	.1908-2	.2364-2	.9957	1.99159
18.82	.6464-5	.7697-3	.8386-2	.9165-1	.1905-2	.2360-2	.9957	1.99160
18.83	.6444-5	.7684-3	.8376-2	.9160-1	.1902-2	.2356-2	.9957	1.99161
18.84	.6424-5	.7671-3	.8366-2	.9155-1	.1898-2	.2352-2	.9957	1.99162
18.85	.6407-5	.7658-3	.8356-2	.9150-1	.1894-2	.2349-2	.9957	1.99163
18.86	.6390-5	.7645-3	.8346-2	.9145-1	.1890-2	.2345-2	.9957	1.99164
18.87	.6373-5	.7632-3	.8336-2	.9140-1	.1886-2	.2341-2	.9957	1.99165
18.88	.6356-5	.7619-3	.8326-2	.9135-1	.1882-2	.2337-2	.9957	1.99166
18.89	.6344-5	.7605-3	.8316-2	.9130-1	.1878-2	.2333-2	.9957	1.99167
18.90	.6330-5	.7592-3	.8306-2	.9126-1	.1874-2	.2329-2	.9957	1.99168
18.91	.6314-5	.7579-3	.8296-2	.9121-1	.1870-2	.2325-2	.9957	1.99169
18.92	.6298-5	.7566-3	.8286-2	.9116-1	.1866-2	.2321-2	.9957	1.99170
18.93	.6281-5	.7553-3	.8276-2	.9102-1	.1862-2	.2317-2	.9957	1.99171
18.94	.6264-5	.7541-3	.8266-2	.9097-1	.1858-2	.2313-2	.9957	1.99172
18.95	.6248-5	.7528-3	.8256-2	.9092-1	.1854-2	.2309-2	.9957	1.99173
18.96	.6231-5	.7515-3	.8246-2	.9087-1	.1850-2	.2305-2	.9957	1.99174
18.97	.6215-5	.7512-3	.8236-2	.9082-1	.1846-2	.2301-2	.9957	1.99175
18.98	.6199-5	.7509-3	.8226-2	.9078-1	.1842-2	.2297-2	.9957	1.99176
18.99	.6183-5	.7494-3	.8216-2	.9073-1	.1838-2	.2293-2	.9957	1.99177

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_{21}/P_1$	$T_{21}/T_1$	$P_{t2}/P_{t1}$	$P_{t2}/P_1$	$M$
3.1.165	80.485	4494	404.8	3.963	102.1	.3840-2	476.4	18.00
3.1.163	80.490	4494	405.8	3.963	102.2	.3834-2	476.4	18.01
3.1.181	80.495	4494	405.7	3.963	102.3	.3828-2	477.4	18.02
3.1.179	80.501	4494	406.1	3.963	102.5	.3821-2	477.9	18.03
3.1.176	80.506	4494	406.6	3.963	102.6	.3815-2	478.5	18.04
3.1.174	80.511	4494	407.0	3.964	102.7	.3808-2	479.0	18.05
3.1.172	80.516	4494	407.9	3.964	102.8	.3799-2	479.5	18.06
3.1.171	80.522	4494	408.4	3.964	102.9	.3790-2	480.0	18.07
3.1.169	80.527	4494	408.4	3.964	103.0	.3784-2	480.6	18.08
3.1.167	80.532	4494	408.8	3.964	103.1	.3779-2	481.1	18.09
3.1.165	80.537	4494	409.3	3.964	103.3	.3778-2	481.7	18.10
3.1.164	80.542	4494	409.7	3.964	103.4	.3772-2	482.2	18.11
3.1.162	80.547	4494	410.0	3.964	103.5	.3766-2	482.7	18.12
3.1.160	80.553	4494	410.5	3.964	103.6	.3759-2	483.3	18.13
3.1.158	80.558	4494	410.9	3.964	103.7	.3753-2	483.8	18.14
3.1.157	80.563	4494	411.1	3.964	103.8	.3747-2	484.3	18.15
3.1.155	80.568	4494	412.0	3.964	103.9	.3741-2	484.9	18.16
3.1.153	80.573	4494	412.4	3.964	104.0	.3735-2	485.4	18.17
3.1.151	80.578	4494	412.9	3.964	104.2	.3729-2	485.9	18.18
3.1.150	80.584	4494	413.3	3.964	104.3	.3723-2	486.5	18.19
3.1.148	80.589	4494	413.8	3.964	104.4	.3717-2	487.0	18.20
3.1.146	80.594	4494	414.0	3.964	104.5	.3705-2	488.1	18.21
3.1.145	80.594	4494	415.7	3.964	104.7	.3699-2	488.6	18.23
3.1.143	80.604	4494	415.9	3.964	104.8	.3693-2	489.1	18.24
3.1.141	80.609	4494	415.6	3.964	105.0	.3687-2	489.7	18.25
3.1.139	80.619	4494	416.1	3.964	105.1	.3681-2	490.2	18.26
3.1.138	80.625	4494	417.0	3.964	105.2	.3675-2	490.7	18.27
3.1.136	80.630	4494	417.4	3.964	105.4	.3669-2	491.3	18.28
3.1.134	80.635	4493	417.9	3.964	105.4	.3663-2	491.8	18.29
3.1.132	80.640	4493	418.4	3.965	105.5	.3657-2	492.3	18.30
3.1.131	80.645	4493	418.8	3.965	105.6	.3651-2	492.9	18.31
3.1.129	80.650	4493	419.3	3.965	105.8	.3645-2	493.4	18.32
3.1.127	80.655	4493	419.7	3.965	105.9	.3639-2	494.0	18.34
3.1.126	80.660	4493	420.2	3.965	106.1	.3634-2	494.5	18.35
3.1.124	80.665	4493	420.7	3.965	106.2	.3628-2	495.0	18.35
3.1.122	80.670	4493	421.1	3.965	106.3	.3623-2	495.6	18.36
3.1.121	80.675	4493	421.6	3.965	106.4	.3616-2	496.1	18.37
3.1.119	80.680	4493	422.0	3.965	106.5	.3610-2	496.7	18.38
3.1.117	80.685	4493	422.6	3.965	106.6	.3604-2	497.2	18.39
3.1.115	80.690	4493	423.0	3.965	106.7	.3599-2	497.7	18.40
3.1.114	80.695	4493	423.4	3.965	106.8	.3593-2	498.3	18.41
3.1.113	80.700	4493	423.9	3.965	106.9	.3587-2	498.8	18.42
3.1.110	80.705	4493	424.3	3.965	107.0	.3581-2	499.4	18.43
3.1.109	80.710	4493	424.8	3.965	107.1	.3575-2	499.9	18.44
3.1.107	80.715	4493	425.5	3.965	107.2	.3569-2	500.4	18.45
3.1.105	80.720	4493	426.0	3.965	107.3	.3563-2	501.0	18.46
3.1.104	80.725	4493	426.7	3.965	107.4	.3558-2	501.5	18.47
3.1.102	80.730	4493	426.8	3.965	107.5	.3553-2	502.1	18.48
3.1.100	80.735	4493	427.1	3.965	107.6	.3547-2	502.6	18.49
3.0.99	80.740	4493	427.6	3.965	107.7	.3541-2	503.2	18.50
3.0.97	80.745	4493	428.0	3.965	107.8	.3536-2	503.7	18.51
3.0.95	80.750	4493	428.5	3.965	107.9	.3530-2	504.2	18.52
3.0.94	80.755	4493	429.0	3.965	108.0	.3524-2	504.8	18.53
3.0.92	80.760	4493	429.4	3.965	108.1	.3519-2	505.3	18.54
3.0.90	80.765	4493	429.9	3.965	108.2	.3513-2	505.9	18.55
3.0.89	80.770	4493	430.3	3.965	108.3	.3508-2	506.4	18.56
3.0.87	80.775	4493	430.8	3.965	108.4	.3502-2	507.0	18.57
3.0.85	80.780	4493	431.3	3.965	108.5	.3496-2	507.5	18.58
3.0.84	80.785	4493	431.7	3.965	108.6	.3491-2	508.1	18.59
3.0.82	80.790	4493	432.2	3.966	109.0	.3485-2	508.6	18.60
3.0.80	80.795	4493	432.7	3.966	109.1	.3480-2	509.2	18.61
3.0.77	80.804	4493	433.6	3.966	109.2	.3474-2	509.7	18.62
3.0.75	80.809	4493	434.1	3.966	109.3	.3469-2	510.3	18.63
3.0.74	80.814	4493	434.5	3.966	109.4	.3463-2	510.8	18.64
3.0.72	80.819	4493	435.0	3.966	109.5	.3458-2	511.3	18.65
3.0.70	80.824	4493	435.5	3.966	109.6	.3452-2	511.9	18.66
3.0.69	80.829	4493	435.9	3.966	109.7	.3447-2	512.4	18.67
3.0.67	80.834	4493	436.4	3.966	109.8	.3441-2	513.0	18.68
3.0.65	80.839	4493	436.9	3.966	109.9	.3435-2	513.5	18.69
3.0.64	80.844	4493	437.3	3.966	110.0	.3430-2	514.1	18.70
3.0.62	80.848	4493	437.8	3.966	110.1	.3425-2	514.6	18.71
3.0.60	80.853	4493	438.5	3.966	110.2	.3420-2	515.2	18.72
3.0.59	80.858	4493	439.7	3.966	110.3	.3414-2	515.7	18.73
3.0.57	80.863	4493	439.9	3.966	110.4	.3409-2	516.3	18.74
3.0.56	80.868	4493	440.2	3.966	110.5	.3404-2	516.8	18.75
3.0.54	80.873	4493	440.6	3.966	110.6	.3400-2	517.4	18.76
3.0.52	80.877	4493	440.9	3.966	110.7	.3395-2	517.9	18.77
3.0.51	80.882	4493	441.1	3.966	110.8	.3390-2	518.5	18.78
3.0.49	80.887	4493	441.6	3.966	111.0	.3377-2	519.6	18.80
3.0.47	80.892	4493	442.0	3.966	111.1	.3371-2	519.9	18.81
3.0.46	80.897	4493	442.5	3.966	111.2	.3366-2	520.7	18.82
3.0.44	80.902	4493	443.0	3.966	111.3	.3361-2	521.3	18.84
3.0.43	80.906	4493	443.4	3.966	111.4	.3356-2	522.4	18.85
3.0.41	80.911	4493	443.9	3.967	111.5	.3351-2	522.9	18.86
3.0.39	80.916	4493	444.4	3.967	111.6	.3346-2	523.4	18.87
3.0.38	80.921	4493	444.8	3.967	111.7	.3341-2	523.9	18.88
3.0.36	80.925	4493	445.3	3.967	111.8	.3335-2	524.5	18.89
3.0.35	80.930	4493	445.8	3.967	111.9	.3330-2	524.6	18.89
3.0.33	80.935	4492	446.3	3.967	112.5	.3325-2	525.1	18.90
3.0.31	80.940	4492	446.7	3.967	112.6	.3320-2	525.7	18.91
3.0.28	80.945	4492	447.2	3.967	112.7	.3314-2	526.2	18.92
3.0.27	80.954	4492	448.2	3.967	113.0	.3309-2	526.8	18.93
3.0.25	80.959	4492	448.6	3.967	113.1	.3304-2	527.4	18.94
3.0.23	80.963	4492	449.1	3.967	113.2	.3300-2	528.5	18.95
3.0.22	80.968	4492	449.6	3.967	113.3	.3298-2	529.0	18.96
3.0.20	80.973	4492	450.1	3.967	113.4	.3294-2	529.6	18.97
3.0.19	80.978	4492	450.5	3.967	113.6	.3290-2	530.1	18.98

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/p <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/p <sub>t</sub>	A*/A	V/V <sub>0</sub>	V/a <sup>2</sup>
1.9 .00	.615 7 - 5	.748 8 - 3	.824 8 - 2	.907 8 - 1	.185 5 - 2	.229 4 - 2	.995 59	1.991 74
1.9 .01	.615 1 - 5	.747 1 - 3	.823 5 - 2	.907 4 - 1	.184 9 - 2	.228 7 - 2	.995 59	1.991 75
1.9 .02	.613 3 - 5	.745 5 - 3	.822 5 - 2	.906 9 - 1	.184 4 - 2	.228 4 - 2	.995 59	1.991 77
1.9 .04	.610 3 - 5	.743 6 - 3	.820 7 - 2	.905 9 - 1	.184 4 - 2	.228 50 - 2	.995 59	1.991 78
1.9 .06	.607 0 - 5	.740 8 - 3	.819 5 - 2	.905 5 - 1	.184 1 - 2	.228 77 - 2	.995 59	1.991 79
1.9 .08	.605 3 - 5	.738 9 - 3	.818 2 - 2	.905 1 - 1	.183 5 - 2	.228 70 - 2	.995 59	1.991 80
1.9 .09	.605 8 - 5	.737 8 - 3	.816 5 - 2	.904 1 - 1	.183 2 - 2	.228 65 - 2	.995 59	1.991 81
1.9 .10	.600 8 - 5	.736 6 - 3	.815 6 - 2	.903 6 - 1	.182 9 - 2	.228 63 - 2	.995 59	1.991 82
1.9 .11	.599 7 - 5	.735 5 - 3	.814 6 - 2	.902 7 - 1	.182 4 - 2	.228 55 - 2	.995 59	1.991 84
1.9 .12	.597 7 - 5	.734 3 - 3	.813 9 - 2	.902 8 - 1	.182 1 - 2	.228 52 - 2	.995 59	1.991 84
1.9 .14	.595 6 - 5	.732 6 - 3	.812 9 - 2	.901 4 - 1	.181 8 - 2	.228 48 - 2	.995 59	1.991 85
1.9 .15	.593 6 - 5	.730 8 - 3	.811 4 - 2	.900 8 - 1	.181 5 - 2	.228 44 - 2	.995 59	1.991 86
1.9 .16	.591 5 - 5	.729 8 - 3	.810 6 - 2	.900 3 - 1	.181 2 - 2	.228 41 - 2	.995 59	1.991 87
1.9 .17	.589 0 - 5	.728 7 - 3	.809 7 - 2	.899 9 - 1	.180 7 - 2	.228 38 - 2	.995 59	1.991 88
1.9 .18	.588 6 - 5	.728 7 - 3	.809 7 - 2	.899 9 - 1	.180 4 - 2	.228 35 - 2	.995 59	1.991 89
1.9 .19	.587 0 - 5	.728 4 - 3	.808 1 - 2	.898 9 - 1	.180 1 - 2	.228 32 - 2	.995 60	1.991 90
1.9 .20	.585 5 - 5	.728 5 - 3	.807 8 - 2	.898 5 - 1	.179 9 - 2	.228 28 - 2	.995 60	1.991 91
1.9 .21	.584 6 - 5	.728 4 - 3	.807 8 - 2	.898 5 - 1	.179 6 - 2	.228 25 - 2	.995 60	1.991 92
1.9 .23	.583 5 - 5	.728 3 - 3	.807 8 - 2	.898 5 - 1	.179 3 - 2	.228 22 - 2	.995 60	1.991 93
1.9 .24	.582 9 - 5	.728 0 - 3	.806 7 - 2	.897 1 - 1	.178 7 - 2	.228 19 - 2	.995 60	1.991 94
1.9 .25	.582 6 - 5	.727 9 - 3	.806 7 - 2	.896 6 - 1	.178 4 - 2	.228 16 - 2	.995 60	1.991 95
1.9 .26	.578 6 - 5	.719 7 - 3	.803 1 - 2	.896 1 - 1	.178 5 - 2	.228 13 - 2	.995 60	1.991 96
1.9 .27	.575 5 - 5	.717 5 - 3	.801 4 - 2	.895 7 - 1	.177 9 - 2	.228 10 - 2	.995 60	1.991 97
1.9 .28	.573 5 - 5	.716 3 - 3	.800 6 - 2	.894 8 - 1	.177 7 - 2	.228 07 - 2	.995 60	1.991 98
1.9 .29	.573 0 - 5	.715 2 - 3	.799 8 - 2	.894 3 - 1	.177 4 - 2	.228 04 - 2	.995 60	1.991 99
1.9 .30	.570 6 - 5	.714 1 - 3	.799 0 - 2	.893 8 - 1	.177 1 - 2	.219 0 - 2	.995 60	1.991 99
1.9 .31	.569 6 - 5	.713 0 - 3	.797 3 - 2	.893 4 - 1	.176 8 - 2	.218 7 - 2	.995 60	1.992 00
1.9 .33	.566 7 - 5	.710 8 - 3	.792 5 - 2	.892 5 - 1	.176 3 - 2	.218 0 - 2	.995 60	1.992 01
1.9 .34	.564 7 - 5	.709 8 - 3	.791 5 - 2	.892 0 - 1	.176 0 - 2	.217 7 - 2	.995 60	1.992 03
1.9 .35	.563 5 - 5	.708 7 - 3	.791 4 - 2	.891 6 - 1	.175 8 - 2	.217 4 - 2	.995 60	1.992 04
1.9 .36	.562 5 - 5	.707 5 - 3	.791 4 - 2	.891 1 - 1	.175 5 - 2	.217 1 - 2	.995 60	1.992 05
1.9 .37	.561 5 - 5	.706 4 - 3	.791 4 - 2	.890 6 - 1	.175 2 - 2	.216 8 - 2	.995 60	1.992 06
1.9 .39	.557 6 - 5	.704 3 - 3	.791 0 - 2	.890 0 - 1	.174 7 - 2	.216 5 - 2	.995 60	1.992 07
1.9 .40	.556 1 - 5	.703 2 - 3	.790 8 - 2	.889 8 - 1	.174 4 - 2	.215 2 - 2	.995 60	1.992 08
1.9 .41	.555 3 - 5	.702 0 - 3	.790 9 - 2	.888 8 - 1	.173 9 - 2	.214 5 - 2	.995 60	1.992 09
1.9 .42	.553 3 - 5	.701 1 - 3	.790 9 - 2	.888 4 - 1	.173 6 - 2	.214 2 - 2	.995 61	1.992 10
1.9 .43	.552 9 - 5	.700 0 - 3	.789 6 - 2	.888 4 - 1	.173 3 - 2	.213 9 - 2	.995 61	1.992 11
1.9 .44	.552 6 - 5	.699 9 - 3	.788 4 - 2	.887 9 - 1	.173 0 - 2	.213 6 - 2	.995 61	1.992 12
1.9 .45	.552 5 - 5	.699 6 - 3	.788 0 - 2	.887 0 - 1	.172 7 - 2	.213 3 - 2	.995 61	1.992 13
1.9 .46	.552 4 - 5	.699 3 - 3	.787 6 - 2	.886 6 - 1	.172 4 - 2	.213 0 - 2	.995 61	1.992 14
1.9 .47	.552 3 - 5	.698 7 - 3	.787 2 - 2	.886 1 - 1	.172 1 - 2	.212 7 - 2	.995 61	1.992 15
1.9 .48	.552 3 - 5	.698 4 - 3	.786 8 - 2	.885 6 - 1	.172 6 - 2	.212 4 - 2	.995 61	1.992 16
1.9 .49	.543 5 - 5	.698 3 - 3	.786 5 - 2	.885 2 - 1	.172 3 - 2	.212 1 - 2	.995 61	1.992 17
1.9 .50	.542 2 - 5	.692 6 - 3	.782 8 - 2	.884 7 - 1	.171 6 - 2	.211 8 - 2	.995 61	1.992 16
1.9 .51	.542 0 - 5	.691 5 - 3	.782 0 - 2	.884 3 - 1	.171 3 - 2	.211 5 - 2	.995 61	1.992 17
1.9 .52	.541 9 - 5	.689 9 - 3	.781 4 - 2	.883 9 - 1	.170 9 - 2	.211 2 - 2	.995 61	1.992 18
1.9 .54	.540 5 - 5	.688 4 - 3	.780 6 - 2	.883 5 - 1	.170 6 - 2	.210 9 - 2	.995 61	1.992 19
1.9 .55	.539 5 - 5	.687 3 - 3	.780 5 - 2	.883 0 - 1	.170 3 - 2	.210 6 - 2	.995 61	1.992 20
1.9 .56	.539 3 - 5	.686 3 - 3	.780 2 - 2	.882 6 - 1	.170 0 - 2	.210 3 - 2	.995 61	1.992 21
1.9 .57	.538 6 - 5	.685 8 - 3	.779 7 - 2	.882 1 - 1	.169 7 - 2	.209 8 - 2	.995 61	1.992 22
1.9 .58	.538 6 - 5	.684 8 - 3	.778 4 - 2	.881 6 - 1	.169 4 - 2	.209 5 - 2	.995 61	1.992 23
1.9 .59	.538 9 - 5	.683 1 - 3	.778 4 - 2	.881 1 - 1	.169 1 - 2	.209 2 - 2	.995 61	1.992 24
1.9 .60	.538 9 - 5	.682 1 - 3	.777 9 - 2	.880 7 - 1	.168 8 - 2	.208 9 - 2	.995 61	1.992 24
1.9 .62	.538 9 - 5	.680 0 - 3	.777 9 - 2	.880 3 - 1	.168 5 - 2	.208 6 - 2	.995 61	1.992 25
1.9 .63	.538 5 - 5	.679 0 - 3	.777 3 - 2	.879 9 - 1	.168 2 - 2	.208 3 - 2	.995 61	1.992 26
1.9 .64	.538 5 - 5	.678 7 - 3	.776 6 - 2	.878 5 - 1	.167 9 - 2	.208 0 - 2	.995 61	1.992 27
1.9 .66	.538 9 - 5	.678 0 - 3	.776 0 - 2	.878 0 - 1	.167 6 - 2	.207 7 - 2	.995 61	1.992 28
1.9 .67	.538 9 - 5	.677 4 - 3	.775 7 - 2	.877 6 - 1	.167 3 - 2	.207 4 - 2	.995 61	1.992 29
1.9 .68	.538 9 - 5	.677 1 - 3	.775 7 - 2	.877 2 - 1	.167 0 - 2	.207 1 - 2	.995 61	1.992 30
1.9 .70	.535 4 - 5	.676 1 - 3	.774 9 - 2	.876 8 - 1	.166 7 - 2	.206 8 - 2	.995 61	1.992 31
1.9 .71	.534 8 - 5	.676 0 - 3	.774 9 - 2	.876 4 - 1	.166 4 - 2	.206 5 - 2	.995 62	1.992 32
1.9 .72	.534 5 - 5	.675 5 - 3	.773 5 - 2	.875 8 - 1	.166 1 - 2	.206 2 - 2	.995 62	1.992 33
1.9 .73	.534 5 - 5	.675 0 - 3	.773 5 - 2	.875 4 - 1	.165 8 - 2	.205 9 - 2	.995 62	1.992 34
1.9 .74	.534 5 - 5	.674 8 - 3	.772 1 - 2	.874 1 - 1	.165 5 - 2	.205 6 - 2	.995 62	1.992 35
1.9 .75	.534 6 - 5	.674 5 - 3	.771 7 - 2	.873 6 - 1	.165 2 - 2	.205 3 - 2	.995 62	1.992 36
1.9 .76	.534 6 - 5	.674 2 - 3	.770 2 - 2	.873 2 - 1	.164 9 - 2	.205 0 - 2	.995 62	1.992 37
1.9 .77	.534 6 - 5	.673 9 - 3	.769 8 - 2	.872 8 - 1	.164 6 - 2	.204 7 - 2	.995 62	1.992 38
1.9 .78	.534 6 - 5	.673 6 - 3	.769 0 - 2	.872 4 - 1	.164 3 - 2	.204 4 - 2	.995 62	1.992 39
1.9 .79	.534 3 - 5	.673 0 - 3	.768 7 - 2	.871 9 - 1	.164 0 - 2	.204 1 - 2	.995 62	1.992 39
1.9 .80	.532 6 - 5	.672 6 - 3	.767 1 - 2	.871 5 - 1	.163 7 - 2	.203 8 - 2	.995 62	1.992 40
1.9 .81	.531 9 - 5	.670 8 - 3	.765 5 - 2	.870 1 - 1	.163 4 - 2	.203 5 - 2	.995 62	1.992 41
1.9 .83	.530 1 - 5	.669 9 - 3	.764 9 - 2	.867 0 - 1	.163 1 - 2	.203 2 - 2	.995 62	1.992 41
1.9 .84	.529 5 - 5	.669 5 - 3	.764 6 - 2	.866 7 - 1	.162 8 - 2	.202 9 - 2	.995 62	1.992 42
1.9 .85	.527 6 - 5	.668 2 - 3	.763 4 - 2	.866 3 - 1	.162 5 - 2	.202 6 - 2	.995 62	1.992 43
1.9 .86	.525 1 - 5	.665 9 - 3	.762 1 - 2	.865 9 - 1	.162 2 - 2	.202 3 - 2	.995 62	1.992 44
1.9 .87	.523 9 - 5	.664 9 - 3	.760 8 - 2	.865 5 - 1	.161 9 - 2	.202 0 - 2	.995 62	1.992 45
1.9 .88	.522 6 - 5	.664 5 - 3	.759 5 - 2	.865 1 - 1	.161 6 - 2	.201 7 - 2	.995 62	1.992 46
1.9 .89	.521 4 - 5	.663 0 - 3	.758 2 - 2	.864 7 - 1	.161 3 - 2	.201 4 - 2	.995 62	1.992 47
1.9 .90	.490 8 - 5	.651 9 - 3	.751 9 - 2	.864 3 - 1	.161 0 - 2	.200 1 - 2	.995 62	1.992 47
1.9 .91	.489 5 - 5	.650 0 - 3	.750 4 - 2	.863 9 - 1	.160 7 - 2	.199 8 - 2	.995 62	1.992 48
1.9 .92	.487 7 - 5	.648 6 - 3	.749 0 - 2	.863 5 - 1	.160 4 - 2	.199 5 - 2	.995 62	1.992 49
1.9 .93	.486 5 - 5	.647 3 - 3	.747 6 - 2	.863 1 - 1	.160 1 - 2	.199 2 - 2	.995 62	1.992 50
1.9 .94	.485 3 - 5	.646 8 - 3	.746 9 - 2	.862 7 - 1	.159 8 - 2	.198 9 - 2	.995 63	1.992 51
1.9 .95	.484 1 - 5	.646 2 - 3	.746 1 - 2	.862 4 - 1	.159 5 - 2	.198 6 - 2	.995 63	1.992 52
1.9 .97	.482 9 - 5	.645 6 - 3	.744 7 - 2	.861 1 - 1	.159 2 - 2	.198 3 - 2	.995 63	1.992 53
1.9 .98	.481 7 - 5	.645 3 - 3	.743 4 - 2	.860 8 - 1	.158 9 - 2	.198 0 - 2	.995 63	1.992 53
1.9 .99	.479 9 - 5	.643 2 - 3	.742 0 - 2	.860 5 - 1	.158 6 - 2	.197 7 - 2	.995 63	1.992 53

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
.017	80.958	4492	451.0	5.967	1.13.7	.3273-2	530.7	19.00
.015	80.967	4492	451.5	5.967	1.13.8	.3263-2	531.3	19.00
.014	80.952	4492	452.0	5.967	1.13.9	.3253-2	532.8	19.00
.012	80.947	4492	452.4	5.967	1.14.0	.3243-2	533.4	19.00
.011	81.004	4492	452.9	5.967	1.14.3	.3234-2	534.9	19.00
.010	81.006	4492	453.4	5.967	1.14.4	.3224-2	535.5	19.00
.009	81.011	4492	453.9	5.967	1.14.5	.3214-2	536.1	19.00
.008	81.015	4492	454.3	5.967	1.14.6	.3204-2	536.7	19.00
.007	81.020	4492	454.8	5.967	1.14.8	.3194-2	537.3	19.00
.006	81.025	4492	455.3	5.967	1.14.8	.3184-2	537.9	19.00
.005	81.029	4492	455.8	5.967	1.14.9	.3174-2	538.5	19.00
.004	81.034	4492	456.3	5.967	1.15.0	.3164-2	539.0	19.00
.003	81.039	4492	456.8	5.967	1.15.1	.3154-2	539.5	19.00
.002	81.043	4492	457.3	5.967	1.15.2	.3144-2	539.9	19.00
.001	81.048	4492	457.7	5.967	1.15.3	.3134-2	540.5	19.00
.000	81.053	4492	458.2	5.968	1.15.4	.3124-2	541.1	19.00
.001	81.057	4492	458.6	5.968	1.15.5	.3114-2	541.7	19.00
.002	81.062	4492	459.1	5.968	1.15.6	.3104-2	542.3	19.00
.003	81.066	4492	459.6	5.968	1.15.7	.3094-2	542.9	19.00
.004	81.071	4492	460.1	5.968	1.15.8	.3084-2	543.5	19.00
.005	81.076	4492	460.6	5.968	1.16.1	.3173-2	544.1	19.00
.006	81.080	4491	461.0	5.968	1.16.2	.3163-2	544.5	19.00
.007	81.085	4491	461.5	5.968	1.16.3	.3153-2	545.1	19.00
.008	81.090	4491	462.0	5.968	1.16.4	.3143-2	545.7	19.00
.009	81.094	4491	462.5	5.968	1.16.5	.3133-2	546.3	19.00
.010	81.099	4491	463.0	5.968	1.16.7	.3123-2	546.9	19.00
.011	81.103	4491	463.4	5.968	1.16.8	.3113-2	547.5	19.00
.012	81.108	4491	463.9	5.968	1.16.9	.3103-2	548.1	19.00
.013	81.113	4491	464.4	5.968	1.17.0	.3093-2	548.7	19.00
.014	81.117	4491	464.9	5.968	1.17.0	.3083-2	549.3	19.00
.015	81.122	4491	465.4	5.968	1.17.3	.3173-2	549.9	19.00
.016	81.126	4491	465.8	5.968	1.17.4	.3163-2	550.5	19.00
.017	81.131	4491	466.3	5.968	1.17.5	.3153-2	551.1	19.00
.018	81.135	4491	466.8	5.968	1.17.6	.3143-2	551.7	19.00
.019	81.140	4491	467.3	5.968	1.17.8	.3133-2	552.3	19.00
.020	81.144	4491	467.8	5.968	1.17.9	.3123-2	552.9	19.00
.021	81.149	4491	468.3	5.968	1.18.0	.3113-2	553.5	19.00
.022	81.154	4491	468.7	5.968	1.18.0	.3103-2	554.1	19.00
.023	81.158	4491	469.2	5.968	1.18.1	.3093-2	554.7	19.00
.024	81.163	4491	469.7	5.968	1.18.4	.3083-2	555.3	19.00
.025	81.167	4491	470.2	5.968	1.18.5	.3073-2	555.9	19.00
.026	81.172	4491	470.7	5.968	1.18.6	.3063-2	556.5	19.00
.027	81.176	4491	471.2	5.968	1.18.7	.3053-2	557.1	19.00
.028	81.181	4491	471.7	5.968	1.18.9	.3043-2	557.7	19.00
.029	81.185	4491	472.1	5.968	1.19.0	.3033-2	558.3	19.00
.030	81.190	4491	472.6	5.968	1.19.1	.3023-2	558.9	19.00
.031	81.194	4491	473.1	5.969	1.19.2	.3013-2	559.5	19.00
.032	81.199	4491	473.6	5.969	1.19.3	.3003-2	559.9	19.00
.033	81.203	4491	474.1	5.969	1.19.5	.2993-2	560.5	19.00
.034	81.208	4491	474.6	5.969	1.19.6	.2983-2	561.1	19.00
.035	81.212	4491	475.1	5.969	1.19.7	.2973-2	561.7	19.00
.036	81.217	4491	475.6	5.969	1.19.8	.2963-2	562.3	19.00
.037	81.221	4491	476.1	5.969	1.19.9	.2953-2	562.9	19.00
.038	81.225	4491	476.6	5.969	1.19.9	.2943-2	563.5	19.00
.039	81.230	4491	477.0	5.969	1.19.9	.2933-2	564.1	19.00
.040	81.235	4491	477.5	5.969	1.19.9	.2923-2	564.7	19.00
.041	81.239	4491	477.9	5.969	1.19.9	.2913-2	565.3	19.00
.042	81.243	4491	478.4	5.969	1.19.9	.2903-2	565.9	19.00
.043	81.247	4491	478.8	5.969	1.19.9	.2893-2	566.5	19.00
.044	81.251	4491	479.3	5.969	1.19.9	.2883-2	567.1	19.00
.045	81.256	4491	479.7	5.969	1.19.9	.2873-2	567.7	19.00
.046	81.260	4491	479.9	5.969	1.19.9	.2863-2	568.3	19.00
.047	81.264	4491	480.3	5.969	1.19.9	.2853-2	568.9	19.00
.048	81.268	4491	480.7	5.969	1.19.9	.2843-2	569.5	19.00
.049	81.272	4491	481.1	5.969	1.19.9	.2833-2	570.1	19.00
.050	81.276	4491	481.5	5.969	1.19.9	.2823-2	570.7	19.00
.051	81.280	4491	481.9	5.969	1.19.9	.2813-2	571.3	19.00
.052	81.284	4491	482.3	5.969	1.19.9	.2803-2	571.9	19.00
.053	81.288	4491	482.7	5.969	1.19.9	.2793-2	572.5	19.00
.054	81.292	4491	483.1	5.969	1.19.9	.2783-2	573.1	19.00
.055	81.296	4491	483.5	5.969	1.19.9	.2773-2	573.7	19.00
.056	81.300	4491	483.9	5.969	1.19.9	.2763-2	574.3	19.00
.057	81.304	4491	484.3	5.969	1.19.9	.2753-2	574.9	19.00
.058	81.308	4491	484.7	5.969	1.19.9	.2743-2	575.5	19.00
.059	81.312	4491	485.1	5.969	1.19.9	.2733-2	576.1	19.00
.060	81.316	4491	485.5	5.969	1.19.9	.2723-2	576.7	19.00
.061	81.320	4491	485.9	5.969	1.19.9	.2713-2	577.3	19.00
.062	81.324	4491	486.3	5.969	1.19.9	.2703-2	577.9	19.00
.063	81.328	4491	486.7	5.969	1.19.9	.2693-2	578.5	19.00
.064	81.332	4491	487.1	5.969	1.19.9	.2683-2	579.1	19.00
.065	81.336	4491	487.5	5.969	1.19.9	.2673-2	579.7	19.00
.066	81.340	4491	487.9	5.969	1.19.9	.2663-2	580.3	19.00
.067	81.344	4490	488.3	5.970	1.19.9	.2653-2	580.9	19.00
.068	81.348	4490	488.7	5.970	1.19.9	.2643-2	581.5	19.00
.069	81.352	4490	489.1	5.970	1.19.9	.2633-2	582.1	19.00
.070	81.356	4490	489.5	5.970	1.19.9	.2623-2	582.7	19.00
.071	81.360	4490	489.9	5.970	1.19.9	.2613-2	583.3	19.00
.072	81.364	4490	490.3	5.970	1.19.9	.2603-2	583.9	19.00
.073	81.368	4490	490.7	5.970	1.19.9	.2593-2	584.5	19.00
.074	81.372	4490	491.1	5.970	1.19.9	.2583-2	585.1	19.00
.075	81.376	4490	491.5	5.970	1.19.9	.2573-2	585.7	19.00
.076	81.380	4490	491.9	5.970	1.19.9	.2563-2	586.3	19.00
.077	81.384	4490	492.3	5.970	1.19.9	.2553-2	586.9	19.00
.078	81.388	4490	492.7	5.970	1.19.9	.2543-2	587.5	19.00
.079	81.392	4490	493.1	5.970	1.19.9	.2533-2	588.1	19.00
.080	81.396	4490	493.5	5.970	1.19.9	.2523-2	588.7	19.00
.081	81.400	4490	493.9	5.970	1.19.9	.2513-2	589.3	19.00
.082	81.404	4490	494.3	5.970	1.19.9	.2503-2	589.9	19.00
.083	81.408	4490	494.7	5.970	1.19.9	.2493-2	590.5	19.00
.084	81.412	4490	495.1	5.970	1.19.9	.2483-2	591.1	19.00
.085	81.416	4490	495.5	5.970	1.19.9	.2473-2	591.7	19.00
.086	81.420	4490	495.9	5.970	1.19.9	.2463-2	592.3	19.00
.087	81.424	4490	496.3	5.970	1.19.9	.2453-2	592.9	19.00
.088	81.428	4490	496.7	5.970	1.19.9	.2443-2	593.5	19.00
.089	81.432	4490	497.1	5.970	1.19.9	.2433-2	594.1	19.00
.090	81.436	4490	497.5	5.970	1.19.9	.2423-2	594.7	19.00
.091	81.440	4490	497.9	5.970	1.19.9	.2413-2	595.3	19.00
.092	81.444	4490	498.3	5.970	1.19.9	.2403-2	595.9	19.00
.093	81.448	4490	498.7	5.970	1.19.9	.2393-2	596.5	19.00
.094	81.452	4490	499.1	5.970	1.19.9	.2383-2	597.1	19.00
.095	81.456	4490	499.5	5.970	1.19.9	.2373-2	597.7	19.00
.096	81.460	4490	499.9	5.970	1.19.9	.2363-2	598.3	19.00
.097	81.464	4490	500.3	5.970	1.19.9	.2353-2	598.9	19.00
.098	81.468	4490	500.7	5.970	1.19.9	.2343-2	599.5	19.00
.099	81.472	4490	501.1	5.970	1.19.9	.2333-2	600.1	19.00
.100	81.476	4490	501.5	5.970	1.19.9	.2323-2	600.7	19.00
.101	81.480	4490	501.9	5.970	1.19.9	.2313-2	601.3	19.00
.102	81.484	4490	502.3	5.9				

TABLE I. - VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/p <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/v <sup>*</sup>
20.000	.4781-5	.6483-3	.7444-2	.8628-1	.1594-18	.1970-2	.9966	1.99254
20.010	.4760-5	.6413-3	.7444-2	.8624-1	.1591-18	.1967-2	.9963	1.99255
20.020	.4740-5	.6399-3	.7422-2	.8615-1	.1587-18	.1962-2	.9963	1.99256
20.030	.4734-1-5	.6398-3	.7415-2	.8613-1	.1584-18	.1959-2	.9963	1.99257
20.040	.4722-1-5	.6397-3	.7400-2	.8611-1	.1582-18	.1956-2	.9963	1.99258
20.050	.4710-1-5	.6396-3	.7385-2	.8598-1	.1577-18	.1953-2	.9963	1.99259
20.060	.4698-1-5	.6395-3	.7370-2	.8596-1	.1575-18	.1950-2	.9963	1.99260
20.070	.4687-1-5	.6394-3	.7357-2	.8594-1	.1573-18	.1947-2	.9963	1.99261
20.080	.4676-1-5	.6393-3	.7344-2	.8590-1	.1571-18	.1944-2	.9963	1.99262
20.090	.4664-1-5	.6392-3	.7331-2	.8588-1	.1569-18	.1941-2	.9963	1.99263
20.100	.4653-1-5	.6391-3	.7319-2	.8585-1	.1566-18	.1938-2	.9963	1.99264
20.110	.4641-1-5	.6390-3	.7306-2	.8582-1	.1563-18	.1935-2	.9963	1.99265
20.120	.4630-1-5	.6389-3	.7294-2	.8579-1	.1560-18	.1932-2	.9963	1.99266
20.130	.4619-1-5	.6388-3	.7281-2	.8576-1	.1557-18	.1929-2	.9963	1.99267
20.140	.4608-1-5	.6387-3	.7268-2	.8573-1	.1554-18	.1926-2	.9963	1.99268
20.150	.4598-1-5	.6386-3	.7255-2	.8570-1	.1551-18	.1923-2	.9963	1.99269
20.160	.4587-1-5	.6385-3	.7242-2	.8567-1	.1548-18	.1920-2	.9963	1.99270
20.170	.4576-1-5	.6384-3	.7229-2	.8564-1	.1545-18	.1917-2	.9963	1.99271
20.180	.4565-1-5	.6383-3	.7216-2	.8561-1	.1542-18	.1914-2	.9963	1.99272
20.190	.4554-1-5	.6382-3	.7203-2	.8558-1	.1539-18	.1911-2	.9963	1.99273
20.200	.4543-1-5	.6381-3	.7190-2	.8555-1	.1536-18	.1908-2	.9963	1.99274
20.210	.4532-1-5	.6380-3	.7177-2	.8552-1	.1533-18	.1905-2	.9963	1.99275
20.220	.4521-1-5	.6379-3	.7164-2	.8549-1	.1530-18	.1902-2	.9963	1.99276
20.230	.4510-1-5	.6378-3	.7151-2	.8546-1	.1527-18	.1899-2	.9963	1.99277
20.240	.4500-1-5	.6377-3	.7138-2	.8543-1	.1524-18	.1896-2	.9963	1.99278
20.250	.4489-1-5	.6376-3	.7125-2	.8540-1	.1521-18	.1893-2	.9963	1.99279
20.260	.4478-1-5	.6375-3	.7112-2	.8537-1	.1518-18	.1890-2	.9963	1.99280
20.270	.4467-1-5	.6374-3	.7099-2	.8534-1	.1515-18	.1887-2	.9963	1.99281
20.280	.4456-1-5	.6373-3	.7086-2	.8531-1	.1512-18	.1884-2	.9963	1.99282
20.290	.4445-1-5	.6372-3	.7073-2	.8528-1	.1509-18	.1881-2	.9963	1.99283
20.300	.4434-1-5	.6371-3	.7060-2	.8525-1	.1506-18	.1878-2	.9963	1.99284
20.310	.4423-1-5	.6370-3	.7047-2	.8522-1	.1503-18	.1875-2	.9963	1.99285
20.320	.4412-1-5	.6369-3	.7034-2	.8519-1	.1500-18	.1872-2	.9963	1.99286
20.330	.4401-1-5	.6368-3	.7021-2	.8516-1	.1497-18	.1869-2	.9963	1.99287
20.340	.4390-1-5	.6367-3	.7008-2	.8513-1	.1494-18	.1866-2	.9963	1.99288
20.350	.4379-1-5	.6366-3	.7005-2	.8510-1	.1491-18	.1863-2	.9963	1.99289
20.360	.4368-1-5	.6365-3	.7002-2	.8507-1	.1488-18	.1860-2	.9963	1.99290
20.370	.4357-1-5	.6364-3	.7000-2	.8504-1	.1485-18	.1857-2	.9963	1.99291
20.380	.4346-1-5	.6363-3	.7000-2	.8501-1	.1482-18	.1854-2	.9963	1.99292
20.390	.4335-1-5	.6362-3	.7000-2	.8498-1	.1479-18	.1851-2	.9963	1.99293
20.400	.4324-1-5	.6361-3	.7000-2	.8495-1	.1476-18	.1848-2	.9963	1.99294
20.410	.4313-1-5	.6360-3	.7000-2	.8492-1	.1473-18	.1845-2	.9963	1.99295
20.420	.4302-1-5	.6359-3	.7000-2	.8489-1	.1470-18	.1842-2	.9963	1.99296
20.430	.4291-1-5	.6358-3	.7000-2	.8486-1	.1467-18	.1839-2	.9963	1.99297
20.440	.4280-1-5	.6357-3	.7000-2	.8483-1	.1464-18	.1836-2	.9963	1.99298
20.450	.4269-1-5	.6356-3	.7000-2	.8480-1	.1461-18	.1833-2	.9963	1.99299
20.460	.4258-1-5	.6355-3	.7000-2	.8477-1	.1458-18	.1830-2	.9963	1.99300
20.470	.4247-1-5	.6354-3	.7000-2	.8474-1	.1455-18	.1827-2	.9963	1.99301
20.480	.4236-1-5	.6353-3	.7000-2	.8471-1	.1452-18	.1824-2	.9963	1.99302
20.490	.4225-1-5	.6352-3	.7000-2	.8468-1	.1449-18	.1821-2	.9963	1.99303
20.500	.4214-1-5	.6351-3	.7000-2	.8465-1	.1446-18	.1818-2	.9963	1.99304
20.510	.4203-1-5	.6350-3	.7000-2	.8462-1	.1443-18	.1815-2	.9963	1.99305
20.520	.4192-1-5	.6349-3	.7000-2	.8459-1	.1440-18	.1812-2	.9963	1.99306
20.530	.4181-1-5	.6348-3	.7000-2	.8456-1	.1437-18	.1809-2	.9963	1.99307
20.540	.4170-1-5	.6347-3	.7000-2	.8453-1	.1434-18	.1806-2	.9963	1.99308
20.550	.4159-1-5	.6346-3	.7000-2	.8450-1	.1431-18	.1803-2	.9963	1.99309
20.560	.4148-1-5	.6345-3	.7000-2	.8447-1	.1428-18	.1800-2	.9963	1.99310
20.570	.4137-1-5	.6344-3	.7000-2	.8444-1	.1425-18	.1797-2	.9963	1.99311
20.580	.4126-1-5	.6343-3	.7000-2	.8441-1	.1422-18	.1794-2	.9963	1.99312
20.590	.4115-1-5	.6342-3	.7000-2	.8438-1	.1419-18	.1791-2	.9963	1.99313
20.600	.4104-1-5	.6341-3	.7000-2	.8435-1	.1416-18	.1788-2	.9963	1.99314
20.610	.4093-1-5	.6340-3	.7000-2	.8432-1	.1413-18	.1785-2	.9963	1.99315
20.620	.4082-1-5	.6339-3	.7000-2	.8429-1	.1410-18	.1782-2	.9963	1.99316
20.630	.4071-1-5	.6338-3	.7000-2	.8426-1	.1407-18	.1779-2	.9963	1.99317
20.640	.4060-1-5	.6337-3	.7000-2	.8423-1	.1404-18	.1776-2	.9963	1.99318
20.650	.4049-1-5	.6336-3	.7000-2	.8420-1	.1401-18	.1773-2	.9963	1.99319
20.660	.4038-1-5	.6335-3	.7000-2	.8417-1	.1398-18	.1770-2	.9963	1.99320
20.670	.4027-1-5	.6334-3	.7000-2	.8414-1	.1395-18	.1767-2	.9963	1.99321
20.680	.4016-1-5	.6333-3	.7000-2	.8411-1	.1392-18	.1764-2	.9963	1.99322
20.690	.4005-1-5	.6332-3	.7000-2	.8408-1	.1389-18	.1761-2	.9963	1.99323
20.700	.3994-1-5	.6331-3	.7000-2	.8405-1	.1386-18	.1758-2	.9963	1.99324
20.710	.3983-1-5	.6330-3	.7000-2	.8402-1	.1383-18	.1755-2	.9963	1.99325
20.720	.3972-1-5	.6329-3	.7000-2	.8399-1	.1380-18	.1752-2	.9963	1.99326
20.730	.3961-1-5	.6328-3	.7000-2	.8396-1	.1377-18	.1749-2	.9963	1.99327
20.740	.3950-1-5	.6327-3	.7000-2	.8393-1	.1374-18	.1746-2	.9963	1.99328
20.750	.3939-1-5	.6326-3	.7000-2	.8390-1	.1371-18	.1743-2	.9963	1.99329
20.760	.3928-1-5	.6325-3	.7000-2	.8387-1	.1368-18	.1740-2	.9963	1.99330
20.770	.3917-1-5	.6324-3	.7000-2	.8384-1	.1365-18	.1737-2	.9963	1.99331
20.780	.3906-1-5	.6323-3	.7000-2	.8381-1	.1362-18	.1734-2	.9963	1.99332
20.790	.3895-1-5	.6322-3	.7000-2	.8378-1	.1359-18	.1731-2	.9963	1.99333
20.800	.3884-1-5	.6321-3	.7000-2	.8375-1	.1356-18	.1728-2	.9963	1.99334
20.810	.3873-1-5	.6320-3	.7000-2	.8372-1	.1353-18	.1725-2	.9963	1.99335
20.820	.3862-1-5	.6319-3	.7000-2	.8369-1	.1350-18	.1722-2	.9963	1.99336
20.830	.3851-1-5	.6318-3	.7000-2	.8366-1	.1347-18	.1719-2	.9963	1.99337
20.840	.3840-1-5	.6317-3	.7000-2	.8363-1	.1344-18	.1716-2	.9963	1.99338
20.850	.3829-1-5	.6316-3	.7000-2	.8360-1	.1341-18	.1713-2	.9963	1.99339
20.860	.3818-1-5	.6315-3	.7000-2	.8357-1	.1338-18	.1710-2	.9963	1.99340
20.870	.3807-1-5	.6314-3	.7000-2	.8354-1	.1335-18	.1707-2	.9963	1.99341
20.880	.3796-1-5	.6313-3	.7000-2	.8351-1	.1332-18	.1704-2	.9963	1.99342
20.890	.3785-1-5	.6312-3	.7000-2	.8348-1	.1329-18	.1701-2	.9963	1.99343
20.900	.3774-1-5	.6311-3	.7000-2	.8345-1	.1326-18	.1698-2	.9963	1.99344
20.910	.3763-1-5	.6310-3	.7000-2	.8342-1	.1323-18	.1695-2	.9963	1.99345
20.920	.3752-1-5	.6309-3	.7000-2	.8339-1	.1320-18	.1692-2	.9963	1.99346
20.930	.3741-1-5	.6308-3	.7000-2	.8336-1	.1317-18	.1689-2	.9963	1.99347
20.940	.3730-1-5	.6307-3	.7000-2	.8333-1	.1314-18	.1686-2	.9963	1.99348
20.950	.3719-1-5	.6306-3	.7000-2	.8330-1	.1311-18	.1683-2	.9963	1.99349
20.960	.3708-1-5	.6305-3	.7000-2	.8327-1	.1308-18	.1680-2	.9963	1.99350
20.970	.3697-1-5	.6304-3	.7000-2	.8324-1	.1305-18	.1677-2	.9963	1.99351
20.980	.3686-1-5	.6303-3	.7000-2	.8321-1	.1302-18	.1674-2	.9963	1.99352
20.990	.3675-1-5	.6302-3	.7000-2	.8318-1	.1300-18	.1671-2	.9963	1.99353

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
2.866	81.431	-4490	499.8	3.970	125.9	-2811-2	588.0	20.00
2.865	81.439	-4490	500.3	3.970	126.0	-2807-2	588.2	20.01
2.862	81.443	-4490	501.3	3.970	126.2	-2799-2	589.8	20.03
2.860	81.448	-4490	501.8	3.970	126.4	-2795-2	590.3	20.04
2.859	81.458	-4490	502.3	3.970	126.5	-2791-2	590.9	20.05
2.857	81.456	-4490	502.8	3.970	126.6	-2786-2	591.5	20.06
2.856	81.460	-4490	503.3	3.970	126.7	-2782-2	592.1	20.07
2.855	81.465	-4490	503.8	3.970	127.0	-2778-2	592.7	20.08
2.853	81.469	-4490	504.3	3.970	127.0	-2774-2	593.3	20.09
2.852	81.473	-4490	504.8	3.971	127.1	-2770-2	593.9	20.10
2.850	81.477	-4490	505.3	3.971	127.3	-2766-2	594.5	20.11
2.847	81.481	-4490	505.8	3.971	127.4	-2762-2	595.1	20.12
2.846	81.486	-4490	506.3	3.971	127.5	-2758-2	595.6	20.13
2.845	81.490	-4490	506.8	3.971	127.6	-2754-2	596.2	20.14
2.844	81.494	-4490	507.3	3.971	127.7	-2750-2	596.8	20.15
2.843	81.498	-4490	507.8	3.971	127.9	-2746-2	597.4	20.16
2.842	81.502	-4490	508.3	3.971	128.0	-2742-2	598.0	20.17
2.840	81.507	-4490	508.8	3.971	128.1	-2738-2	598.6	20.18
2.839	81.511	-4490	509.3	3.971	128.3	-2734-2	599.2	20.19
2.838	81.515	-4490	509.8	3.971	128.4	-2730-2	599.8	20.20
2.836	81.519	-4490	510.3	3.971	128.5	-2726-2	600.4	20.21
2.835	81.523	-4490	510.8	3.971	128.6	-2722-2	601.0	20.22
2.834	81.527	-4490	511.3	3.971	128.6	-2718-2	601.6	20.23
2.833	81.532	-4490	511.8	3.971	128.9	-2714-2	602.2	20.24
2.831	81.536	-4490	512.3	3.971	129.0	-2710-2	602.8	20.25
2.830	81.540	-4490	512.8	3.971	129.1	-2706-2	603.4	20.26
2.828	81.544	-4490	513.3	3.971	129.3	-2702-2	604.0	20.27
2.826	81.548	-4490	513.8	3.971	129.4	-2698-2	604.6	20.28
2.825	81.552	-4489	514.4	3.971	129.5	-2694-2	605.1	20.29
2.824	81.557	-4489	514.9	3.971	129.7	-2690-2	605.7	20.30
2.822	81.561	-4489	515.4	3.971	129.8	-2686-2	606.3	20.31
2.821	81.565	-4489	515.9	3.971	129.9	-2682-2	606.9	20.32
2.819	81.569	-4489	516.4	3.971	130.0	-2678-2	607.5	20.33
2.818	81.573	-4489	516.9	3.971	130.0	-2674-2	608.1	20.34
2.817	81.577	-4489	517.4	3.971	130.2	-2670-2	608.7	20.35
2.815	81.581	-4489	517.9	3.971	130.4	-2666-2	609.3	20.36
2.814	81.585	-4489	518.4	3.971	130.5	-2662-2	609.9	20.37
2.813	81.589	-4489	518.9	3.971	130.6	-2659-2	610.5	20.38
2.811	81.594	-4489	519.4	3.971	130.8	-2655-2	611.1	20.39
2.810	81.598	-4489	520.0	3.971	130.9	-2651-2	611.7	20.40
2.808	81.602	-4489	520.5	3.971	131.1	-2647-2	612.3	20.41
2.807	81.606	-4489	521.0	3.971	131.2	-2643-2	612.9	20.42
2.806	81.610	-4489	521.5	3.971	131.4	-2639-2	613.5	20.43
2.804	81.614	-4489	522.0	3.971	131.4	-2636-2	614.1	20.44
2.803	81.618	-4489	522.5	3.972	131.5	-2632-2	614.7	20.45
2.801	81.622	-4489	523.0	3.972	131.7	-2628-2	615.3	20.46
2.800	81.626	-4489	523.5	3.972	131.8	-2624-2	615.9	20.47
2.799	81.630	-4489	524.0	3.972	131.9	-2620-2	616.5	20.48
2.797	81.634	-4489	524.6	3.972	132.1	-2617-2	617.1	20.49
2.796	81.638	-4489	525.1	3.972	132.2	-2613-2	617.7	20.50
2.795	81.642	-4489	525.6	3.972	132.2	-2609-2	618.3	20.51
2.793	81.646	-4489	526.1	3.972	132.5	-2605-2	618.9	20.52
2.791	81.651	-4489	526.6	3.972	132.6	-2601-2	619.5	20.53
2.789	81.655	-4489	527.1	3.972	132.7	-2598-2	620.1	20.54
2.788	81.659	-4489	527.6	3.972	132.8	-2594-2	620.7	20.55
2.787	81.663	-4489	528.1	3.972	133.0	-2590-2	621.3	20.56
2.785	81.667	-4489	528.7	3.972	133.1	-2587-2	622.0	20.57
2.784	81.671	-4489	529.2	3.972	133.2	-2583-2	622.6	20.58
2.782	81.675	-4489	529.7	3.972	133.4	-2579-2	623.2	20.59
2.781	81.679	-4489	530.2	3.972	133.5	-2575-2	623.8	20.60
2.780	81.683	-4489	530.7	3.972	133.5	-2572-2	624.4	20.61
2.778	81.687	-4489	531.2	3.972	133.6	-2568-2	625.0	20.62
2.777	81.691	-4489	531.7	3.972	133.6	-2564-2	625.6	20.63
2.776	81.695	-4489	532.3	3.972	134.0	-2561-2	626.2	20.64
2.774	81.703	-4489	533.3	3.972	134.1	-2557-2	626.8	20.65
2.773	81.707	-4489	533.8	3.972	134.4	-2553-2	627.4	20.66
2.772	81.711	-4489	534.3	3.972	134.5	-2550-2	628.0	20.67
2.770	81.715	-4489	534.8	3.972	134.6	-2546-2	628.6	20.68
2.769	81.719	-4489	535.4	3.972	134.8	-2539-2	629.2	20.70
2.768	81.723	-4489	535.9	3.972	134.9	-2535-2	630.4	20.71
2.766	81.727	-4489	536.4	3.972	135.0	-2531-2	631.1	20.72
2.765	81.731	-4489	536.9	3.972	135.2	-2528-2	631.7	20.73
2.764	81.735	-4489	537.4	3.972	135.5	-2524-2	632.3	20.74
2.762	81.739	-4489	538.0	3.972	135.5	-2521-2	632.9	20.75
2.760	81.743	-4489	538.5	3.972	135.6	-2517-2	633.5	20.76
2.758	81.747	-4489	539.0	3.972	135.7	-2513-2	634.1	20.77
2.757	81.750	-4489	539.5	3.972	135.8	-2510-2	634.7	20.78
2.757	81.754	-4489	540.0	3.972	135.9	-2506-2	635.3	20.79
2.756	81.758	-4489	540.6	3.972	136.1	-2503-2	635.9	20.80
2.754	81.762	-4489	541.1	3.972	136.2	-2499-2	636.5	20.81
2.753	81.766	-4489	541.6	3.972	136.3	-2495-2	637.2	20.82
2.752	81.770	-4489	542.1	3.972	136.5	-2492-2	637.8	20.83
2.750	81.774	-4489	542.6	3.972	136.5	-2488-2	638.4	20.84
2.749	81.778	-4489	543.2	3.972	136.7	-2485-2	639.0	20.85
2.748	81.782	-4489	543.7	3.972	136.9	-2481-2	639.6	20.86
2.746	81.786	-4489	544.2	3.972	137.0	-2478-2	640.2	20.87
2.745	81.790	-4489	544.7	3.972	137.1	-2474-2	640.8	20.88
2.744	81.794	-4489	545.2	3.972	137.2	-2471-2	641.4	20.89
2.742	81.798	-4488	545.8	3.973	137.4	-2467-2	642.1	20.90
2.741	81.802	-4488	546.3	3.973	137.5	-2464-2	642.7	20.91
2.740	81.805	-4488	546.8	3.973	137.6	-2460-2	643.3	20.92
2.739	81.809	-4488	547.3	3.973	137.6	-2457-2	644.9	20.93
2.737	81.813	-4488	547.9	3.973	137.9	-2453-2	644.5	20.94
2.736	81.817	-4488	548.4	3.973	138.0	-2450-2	645.1	20.95
2.735	81.881	-4488	548.9	3.973	138.2	-2446-2	645.7	20.96
2.733	81.885	-4488	549.4	3.973	138.3	-2443-2	646.4	20.97
2.732	81.889	-4488	550.0	3.973	138.4	-2439-2	647.0	20.98
2.731	81.893	-4488	550.5	3.973	138.6	-2436-2	647.6	20.99

TABLE I. - VALUES FOR RATIOS OF

M	D/D <sub>t</sub>	R/R <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/p <sub>t</sub>	A°/A	V/V <sub>0</sub>	V/a°
21.00	.3753-5	.5554-3	.6757-2	.8290-1	.1379-2	.1704-2	.9966	1.99323
21.01	.3774-5	.5554-3	.6750-2	.8212-1	.1375-2	.1702-2	.9966	1.99324
21.03	.3773-5	.5553-3	.6744-2	.8208-1	.1373-2	.1697-2	.9966	1.99325
21.04	.3771-5	.5553-3	.6738-2	.8204-1	.1371-2	.1695-2	.9966	1.99326
21.05	.3770-5	.5551-3	.6725-2	.8201-1	.1369-2	.1693-2	.9966	1.99327
21.07	.36700-5	.55507-3	.6719-2	.8197-1	.1368-2	.1691-2	.9966	1.99328
21.09	.36691-5	.55499-3	.6718-2	.8195-1	.1366-2	.1689-2	.9966	1.99329
21.10	.36683-5	.55494-3	.6706-2	.8188-1	.1364-2	.1687-2	.9966	1.99330
21.11	.36674-5	.55484-3	.6700-2	.8183-1	.1363-2	.1683-2	.9966	1.99331
21.13	.36665-5	.55468-3	.6698-2	.8177-1	.1360-2	.1681-2	.9966	1.99332
21.14	.36657-5	.55469-3	.6698-2	.8174-1	.1358-2	.1678-2	.9967	1.99333
21.15	.36648-5	.55453-3	.6674-2	.8170-1	.1356-2	.1677-2	.9967	1.99334
21.16	.36639-5	.55445-3	.6668-2	.8166-1	.1354-2	.1675-2	.9967	1.99335
21.17	.36632-5	.55439-3	.6662-2	.8162-1	.1353-2	.1674-2	.9967	1.99336
21.18	.36623-5	.55430-3	.6656-2	.8158-1	.1352-2	.1673-2	.9967	1.99337
21.19	.36615-5	.55422-3	.6649-2	.8155-1	.1351-2	.1672-2	.9967	1.99338
21.20	.35880-5	.55415-3	.6643-2	.8151-1	.1350-2	.1671-2	.9967	1.99339
21.21	.35879-5	.55407-3	.6637-2	.8147-1	.1349-2	.1670-2	.9967	1.99340
21.22	.35878-5	.55399-3	.6631-2	.8143-1	.1348-2	.1669-2	.9967	1.99341
21.23	.35877-5	.55398-3	.6625-2	.8139-1	.1347-2	.1668-2	.9967	1.99342
21.24	.35876-5	.55397-3	.6619-2	.8135-1	.1346-2	.1667-2	.9967	1.99343
21.25	.35875-5	.55387-3	.6613-2	.8131-1	.1345-2	.1666-2	.9967	1.99344
21.26	.35874-5	.55386-3	.6606-2	.8128-1	.1344-2	.1665-2	.9967	1.99345
21.27	.35873-5	.55385-3	.6600-2	.8124-1	.1343-2	.1664-2	.9967	1.99346
21.28	.35872-5	.55384-3	.6594-2	.8120-1	.1342-2	.1663-2	.9967	1.99347
21.29	.35871-5	.55383-3	.6588-2	.8116-1	.1341-2	.1662-2	.9967	1.99348
21.30	.34497-5	.55384-3	.6582-2	.8112-1	.1340-2	.1661-2	.9967	1.99349
21.31	.34496-5	.55383-3	.6576-2	.8108-1	.1339-2	.1660-2	.9967	1.99350
21.32	.34495-5	.55382-3	.6570-2	.8104-1	.1338-2	.1659-2	.9967	1.99351
21.33	.34473-5	.55308-3	.6565-2	.8097-1	.1337-2	.1658-2	.9967	1.99352
21.34	.34472-5	.55307-3	.6561-2	.8094-1	.1336-2	.1657-2	.9967	1.99353
21.35	.34471-5	.55306-3	.6555-2	.8090-1	.1335-2	.1656-2	.9967	1.99354
21.36	.34470-5	.55305-3	.6549-2	.8086-1	.1334-2	.1655-2	.9967	1.99355
21.37	.34469-5	.55304-3	.6543-2	.8082-1	.1333-2	.1654-2	.9967	1.99356
21.38	.34468-5	.55303-3	.6538-2	.8078-1	.1332-2	.1653-2	.9967	1.99357
21.39	.34225-5	.55247-3	.6529-2	.8074-1	.1331-2	.1652-2	.9967	1.99358
21.40	.34197-5	.55239-3	.6515-2	.8070-1	.1330-2	.1651-2	.9967	1.99359
21.41	.34196-5	.55238-3	.6509-2	.8066-1	.1329-2	.1650-2	.9967	1.99360
21.42	.34195-5	.55237-3	.6503-2	.8062-1	.1328-2	.1649-2	.9967	1.99361
21.43	.34194-5	.55236-3	.6497-2	.8058-1	.1327-2	.1648-2	.9967	1.99362
21.44	.34193-5	.55228-3	.6491-2	.8054-1	.1326-2	.1647-2	.9967	1.99363
21.45	.34192-5	.55227-3	.6485-2	.8050-1	.1325-2	.1646-2	.9967	1.99364
21.46	.34191-5	.55226-3	.6479-2	.8046-1	.1324-2	.1645-2	.9967	1.99365
21.47	.34190-5	.55225-3	.6473-2	.8042-1	.1323-2	.1644-2	.9967	1.99366
21.48	.34189-5	.55224-3	.6467-2	.8038-1	.1322-2	.1643-2	.9967	1.99367
21.49	.34188-5	.55223-3	.6461-2	.8034-1	.1321-2	.1642-2	.9967	1.99368
21.50	.33339-5	.55178-3	.6448-2	.8030-1	.1320-2	.1641-2	.9967	1.99369
21.51	.33331-5	.55177-3	.6442-2	.8026-1	.1319-2	.1640-2	.9967	1.99370
21.52	.33223-5	.55164-3	.6436-2	.8022-1	.1318-2	.1639-2	.9967	1.99371
21.53	.33216-5	.55163-3	.6430-2	.8018-1	.1317-2	.1638-2	.9967	1.99372
21.54	.33208-5	.55162-3	.6424-2	.8014-1	.1316-2	.1637-2	.9967	1.99373
21.55	.33207-5	.55161-3	.6418-2	.8010-1	.1315-2	.1636-2	.9967	1.99374
21.56	.33206-5	.55160-3	.6412-2	.8006-1	.1314-2	.1635-2	.9967	1.99375
21.57	.33205-5	.55159-3	.6406-2	.8002-1	.1313-2	.1634-2	.9967	1.99376
21.58	.33204-5	.55158-3	.6400-2	.8000-1	.1312-2	.1633-2	.9967	1.99377
21.59	.33203-5	.55157-3	.6394-2	.7996-1	.1311-2	.1632-2	.9967	1.99378
21.60	.33202-5	.55156-3	.6389-2	.7993-1	.1310-2	.1631-2	.9967	1.99379
21.61	.33201-5	.55155-3	.6383-2	.7989-1	.1309-2	.1630-2	.9967	1.99380
21.62	.33200-5	.55154-3	.6377-2	.7986-1	.1308-2	.1629-2	.9967	1.99381
21.63	.33209-5	.55153-3	.6371-2	.7982-1	.1307-2	.1628-2	.9967	1.99382
21.64	.33208-5	.55152-3	.6365-2	.7978-1	.1306-2	.1627-2	.9967	1.99383
21.65	.33207-5	.55151-3	.6359-2	.7975-1	.1305-2	.1626-2	.9967	1.99384
21.66	.33206-5	.55150-3	.6353-2	.7971-1	.1304-2	.1625-2	.9967	1.99385
21.67	.33205-5	.55149-3	.6347-2	.7967-1	.1303-2	.1624-2	.9967	1.99386
21.68	.33204-5	.55148-3	.6341-2	.7963-1	.1302-2	.1623-2	.9967	1.99387
21.69	.33203-5	.55147-3	.6335-2	.7959-1	.1301-2	.1622-2	.9967	1.99388
21.70	.31897-5	.50107-3	.6331-2	.7955-1	.1300-2	.1621-2	.9968	1.99389
21.71	.31896-5	.50106-3	.6325-2	.7951-1	.1299-2	.1620-2	.9968	1.99390
21.72	.31895-5	.50105-3	.6319-2	.7947-1	.1298-2	.1619-2	.9968	1.99391
21.73	.31894-5	.50104-3	.6313-2	.7943-1	.1297-2	.1618-2	.9968	1.99392
21.74	.31893-5	.50103-3	.6307-2	.7939-1	.1296-2	.1617-2	.9968	1.99393
21.75	.31892-5	.50102-3	.6301-2	.7935-1	.1295-2	.1616-2	.9968	1.99394
21.76	.31891-5	.49996-3	.6295-2	.7931-1	.1294-2	.1615-2	.9968	1.99395
21.77	.31890-5	.49989-3	.6289-2	.7927-1	.1293-2	.1614-2	.9968	1.99396
21.78	.31889-5	.49982-3	.6283-2	.7923-1	.1292-2	.1613-2	.9968	1.99397
21.79	.31888-5	.49975-3	.6277-2	.7919-1	.1291-2	.1612-2	.9968	1.99398
21.80	.31117-5	.49668-3	.6273-2	.7915-1	.1290-2	.1611-2	.9968	1.99399
21.81	.31116-5	.49667-3	.6267-2	.7911-1	.1289-2	.1610-2	.9968	1.99400
21.82	.31115-5	.49666-3	.6261-2	.7907-1	.1288-2	.1609-2	.9968	1.99401
21.83	.31114-5	.49648-3	.6255-2	.7903-1	.1287-2	.1608-2	.9968	1.99402
21.84	.31113-5	.49647-3	.6249-2	.7900-1	.1286-2	.1607-2	.9968	1.99403
21.85	.31112-5	.49646-3	.6243-2	.7896-1	.1285-2	.1606-2	.9968	1.99404
21.86	.31111-5	.49645-3	.6237-2	.7892-1	.1284-2	.1605-2	.9968	1.99405
21.87	.31067-5	.49921-3	.6231-2	.7888-1	.1283-2	.1604-2	.9969	1.99406
21.88	.31066-5	.49914-3	.6225-2	.7884-1	.1282-2	.1603-2	.9969	1.99407
21.89	.31054-5	.49908-3	.6219-2	.7880-1	.1281-2	.1602-2	.9969	1.99408
21.90	.31047-5	.49901-3	.6213-2	.7876-1	.1280-2	.1601-2	.9969	1.99409
21.91	.31046-5	.49894-3	.6207-2	.7872-1	.1279-2	.1600-2	.9969	1.99410
21.92	.31045-5	.49888-3	.6201-2	.7868-1	.1278-2	.1599-2	.9969	1.99411
21.93	.31044-5	.49887-3	.6195-2	.7864-1	.1277-2	.1598-2	.9969	1.99412
21.94	.31043-5	.49886-3	.6189-2	.7860-1	.1276-2	.1597-2	.9969	1.99413
21.95	.31042-5	.49885-3	.6183-2	.7856-1	.1275-2	.1596-2	.9969	1.99414
21.96	.31041-5	.49884-3	.6177-2	.7852-1	.1274-2	.1595-2	.9969	1.99415
21.97	.31040-5	.49883-3	.6171-2	.7848-1	.1273-2	.1594-2	.9969	1.99416
21.98	.31039-5	.49882-3	.6165-2	.7844-1	.1272-2	.1593-2	.9969	1.99417
21.99	.31038-5	.49881-3	.6159-2	.7840-1	.1271-2	.1592-2	.9969	1.99418
21.00	.31037-5	.49880-3	.6153-2	.7836-1	.1270-2	.1591-2	.9969	1.99419

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
2.729	81.836	.4488	551.0	3.973	138.7	.2433	648.2	21.00
2.725	81.840	.4488	551.5	3.973	138.8	.2426	648.8	21.01
2.727	81.844	.4488	552.0	3.973	138.9	.2423	649.4	21.02
2.726	81.848	.4488	552.5	3.973	139.1	.2419	650.1	21.03
2.724	81.852	.4488	553.1	3.973	139.2	.2415	650.7	21.04
2.723	81.856	.4488	553.6	3.973	139.3	.2413	651.3	21.05
2.722	81.860	.4488	554.2	3.973	139.5	.2409	651.9	21.06
2.720	81.863	.4488	554.7	3.973	139.6	.2405	652.5	21.07
2.719	81.867	.4488	555.2	3.973	139.7	.2402	653.2	21.08
2.718	81.871	.4488	555.7	3.973	139.9	.2402	653.8	21.09
2.716	81.875	.4488	556.3	3.973	140.0	.2398	654.4	21.10
2.715	81.879	.4488	556.8	3.973	140.1	.2395	655.0	21.11
2.714	81.883	.4488	557.3	3.973	140.2	.2388	655.6	21.12
2.713	81.886	.4488	557.8	3.973	140.4	.2385	656.3	21.13
2.711	81.890	.4488	558.4	3.973	140.5	.2382	656.9	21.14
2.710	81.894	.4488	558.9	3.973	140.7	.2378	657.5	21.15
2.709	81.898	.4488	559.4	3.973	140.8	.2375	658.1	21.16
2.707	81.902	.4488	560.0	3.973	140.9	.2372	658.7	21.17
2.706	81.905	.4488	560.5	3.973	141.0	.2369	659.4	21.18
2.705	81.909	.4488	561.0	3.973	141.2	.2366	660.0	21.19
2.704	81.913	.4488	561.6	3.973	141.3	.2362	660.6	21.20
2.703	81.917	.4488	562.1	3.974	141.5	.2358	661.2	21.21
2.701	81.921	.4488	562.6	3.974	141.6	.2355	661.9	21.22
2.700	81.924	.4488	563.1	3.974	141.7	.2352	662.5	21.23
2.699	81.927	.4488	563.7	3.974	141.9	.2349	663.1	21.24
2.697	81.930	.4488	564.2	3.974	142.0	.2345	663.7	21.25
2.696	81.932	.4488	564.7	3.974	142.1	.2342	664.3	21.26
2.695	81.936	.4488	565.3	3.974	142.3	.2339	665.0	21.27
2.693	81.940	.4488	565.8	3.974	142.4	.2336	665.6	21.28
2.692	81.943	.4488	566.3	3.974	142.5	.2332	666.2	21.29
2.691	81.947	.4488	566.8	3.974	142.6	.2330	666.8	21.30
2.690	81.951	.4488	567.3	3.974	142.7	.2328	667.5	21.31
2.688	81.955	.4488	567.8	3.974	142.8	.2325	668.1	21.32
2.687	81.958	.4488	568.3	3.974	142.9	.2322	668.7	21.33
2.686	81.962	.4488	568.8	3.974	143.0	.2319	669.3	21.34
2.685	81.966	.4488	569.3	3.974	143.1	.2316	670.0	21.35
2.684	81.970	.4488	569.8	3.974	143.3	.2312	670.6	21.36
2.683	81.973	.4488	570.3	3.974	143.5	.2309	671.2	21.37
2.682	81.977	.4488	570.8	3.974	143.6	.2305	671.8	21.38
2.681	81.981	.4488	571.3	3.974	143.7	.2302	672.5	21.39
2.680	81.985	.4488	571.7	3.974	143.9	.2300	673.1	21.40
2.678	81.988	.4488	572.2	3.974	144.0	.2300	673.8	21.41
2.677	81.992	.4488	572.7	3.974	144.1	.2297	674.4	21.42
2.676	81.996	.4488	573.3	3.974	144.3	.2294	675.0	21.43
2.675	81.999	.4488	573.8	3.974	144.4	.2291	675.6	21.44
2.673	82.003	.4488	574.3	3.974	144.5	.2287	676.3	21.45
2.672	82.007	.4488	574.9	3.974	144.7	.2284	676.9	21.46
2.671	82.011	.4488	575.4	3.974	144.8	.2281	677.5	21.47
2.669	82.016	.4488	576.0	3.974	144.9	.2278	678.2	21.48
2.667	82.022	.4488	577.0	3.974	145.1	.2275	678.8	21.49
2.666	82.025	.4488	577.6	3.974	145.3	.2266	679.4	21.50
2.665	82.029	.4488	578.1	3.974	145.5	.2262	680.1	21.51
2.663	82.033	.4488	578.6	3.974	145.6	.2259	680.7	21.52
2.662	82.036	.4488	579.2	3.974	145.7	.2255	681.3	21.53
2.661	82.040	.4488	579.7	3.974	145.9	.2252	682.0	21.54
2.660	82.044	.4488	580.3	3.974	146.0	.2250	682.6	21.55
2.658	82.047	.4488	580.8	3.974	146.1	.2245	683.3	21.56
2.657	82.051	.4487	581.3	3.974	146.3	.2242	684.5	21.57
2.656	82.055	.4487	581.9	3.974	146.4	.2240	685.1	21.58
2.655	82.058	.4487	582.4	3.974	146.5	.2237	685.7	21.59
2.654	82.062	.4487	583.0	3.974	146.7	.2237	685.8	21.60
2.653	82.066	.4487	583.5	3.974	146.8	.2234	686.4	21.61
2.651	82.069	.4487	584.0	3.974	146.9	.2232	686.9	21.62
2.650	82.073	.4487	584.6	3.974	147.1	.2229	687.7	21.63
2.649	82.077	.4487	585.1	3.974	147.2	.2228	688.3	21.64
2.647	82.080	.4487	585.7	3.974	147.4	.2225	688.9	21.65
2.646	82.084	.4487	586.2	3.974	147.5	.2222	689.6	21.66
2.645	82.088	.4487	586.7	3.974	147.6	.2219	690.3	21.67
2.644	82.091	.4487	587.3	3.974	147.8	.2215	690.8	21.68
2.643	82.095	.4487	587.8	3.974	147.9	.2210	691.5	21.69
2.641	82.098	.4487	588.4	3.975	148.0	.2207	692.1	21.70
2.640	82.102	.4487	588.9	3.975	148.2	.2204	692.8	21.71
2.639	82.106	.4487	589.4	3.975	148.3	.2201	693.4	21.72
2.638	82.109	.4487	590.0	3.975	148.4	.2198	694.0	21.73
2.636	82.113	.4487	590.5	3.975	148.6	.2195	694.7	21.74
2.635	82.117	.4487	591.1	3.975	148.7	.2192	695.3	21.75
2.634	82.120	.4487	591.6	3.975	148.8	.2189	695.9	21.76
2.633	82.124	.4487	592.2	3.975	148.9	.2186	696.6	21.77
2.632	82.127	.4487	592.7	3.975	149.0	.2183	697.2	21.78
2.630	82.131	.4487	593.3	3.975	149.1	.2180	697.9	21.79
2.629	82.135	.4487	593.8	3.975	149.4	.2177	698.5	21.80
2.628	82.139	.4487	594.3	3.975	149.5	.2174	699.1	21.81
2.627	82.142	.4487	594.9	3.975	149.7	.2171	699.8	21.82
2.626	82.145	.4487	595.4	3.975	149.8	.2168	700.4	21.83
2.625	82.149	.4487	595.9	3.975	149.9	.2165	701.1	21.84
2.623	82.152	.4487	596.5	3.975	149.9	.2162	701.7	21.85
2.622	82.156	.4487	597.1	3.975	150.0	.2159	703.0	21.86
2.621	82.159	.4487	597.6	3.975	150.0	.2156	703.6	21.87
2.620	82.163	.4487	598.2	3.975	150.5	.2153	704.3	21.88
2.618	82.167	.4487	598.7	3.975	150.6	.2151	704.9	21.89
2.617	82.170	.4487	599.3	3.975	150.8	.2148	704.9	21.90
2.616	82.174	.4487	599.8	3.975	150.9	.2145	705.6	21.91
2.615	82.177	.4487	600.4	3.975	151.0	.2142	706.2	21.92
2.614	82.181	.4487	600.9	3.975	151.1	.2139	706.8	21.93
2.612	82.184	.4487	601.5	3.975	151.3	.2136	707.5	21.94
2.611	82.188	.4487	602.0	3.975	151.4	.2133	708.1	21.95
2.610	82.192	.4487	602.6	3.975	151.6	.2130	708.8	21.96
2.609	82.195	.4487	603.1	3.975	151.7	.2127	709.4	21.97
2.608	82.199	.4487	603.7	3.975	151.8	.2124	710.1	21.98
2.606	82.202	.4487	604.2	3.975	152.0	.2122	710.7	21.99

TABLE I.- VALUES FOR RATIOS OF

M	p/p <sub>t</sub>	p/p <sub>t</sub>	T/T <sub>t</sub>	s/s <sub>t</sub>	q/p <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/s <sup>*</sup>
22.0.0	.2973	.2973	.4035	.6150	.7849	.1201	.9969	1.9938
22.0.1	.2972	.2972	.4028	.6155	.7845	.1200	.9969	1.9938
22.0.2	.2971	.2971	.4023	.6149	.7842	.1198	.9969	1.9938
22.0.3	.2970	.2970	.4019	.6144	.7838	.1196	.9969	1.9938
22.0.4	.2969	.2969	.4015	.6139	.7835	.1195	.9969	1.9938
22.0.5	.2968	.2968	.4011	.6135	.7832	.1194	.9969	1.9938
22.0.6	.2967	.2967	.4007	.6132	.7829	.1193	.9969	1.9938
22.0.7	.2966	.2966	.4003	.6129	.7826	.1192	.9969	1.9938
22.0.8	.2965	.2965	.3999	.6126	.7824	.1191	.9969	1.9938
22.0.9	.2964	.2964	.3995	.6123	.7821	.1190	.9969	1.9938
22.1.0	.2963	.2963	.3991	.6120	.7818	.1189	.9969	1.9938
22.1.1	.2962	.2962	.3987	.6117	.7815	.1188	.9969	1.9938
22.1.2	.2961	.2961	.3983	.6114	.7812	.1187	.9969	1.9938
22.1.3	.2960	.2960	.3979	.6111	.7809	.1186	.9969	1.9938
22.1.4	.2959	.2959	.3975	.6108	.7806	.1185	.9969	1.9938
22.1.5	.2958	.2958	.3971	.6105	.7803	.1184	.9969	1.9938
22.1.6	.2957	.2957	.3967	.6102	.7800	.1183	.9969	1.9938
22.1.7	.2956	.2956	.3963	.6099	.7797	.1182	.9969	1.9938
22.1.8	.2955	.2955	.3959	.6096	.7794	.1181	.9969	1.9938
22.1.9	.2954	.2954	.3955	.6093	.7791	.1180	.9969	1.9938
22.2.0	.2953	.2953	.3951	.6090	.7788	.1179	.9969	1.9938
22.2.1	.2952	.2952	.3947	.6087	.7785	.1178	.9969	1.9938
22.2.2	.2951	.2951	.3943	.6084	.7782	.1177	.9969	1.9938
22.2.3	.2950	.2950	.3939	.6081	.7779	.1176	.9969	1.9938
22.2.4	.2949	.2949	.3935	.6078	.7776	.1175	.9969	1.9938
22.2.5	.2948	.2948	.3931	.6075	.7773	.1174	.9969	1.9938
22.2.6	.2947	.2947	.3927	.6072	.7770	.1173	.9969	1.9938
22.2.7	.2946	.2946	.3923	.6069	.7767	.1172	.9969	1.9938
22.2.8	.2945	.2945	.3919	.6066	.7764	.1171	.9969	1.9938
22.2.9	.2944	.2944	.3915	.6063	.7761	.1170	.9969	1.9938
22.3.0	.2943	.2943	.3911	.6060	.7758	.1169	.9969	1.9938
22.3.1	.2942	.2942	.3907	.6057	.7755	.1168	.9969	1.9938
22.3.2	.2941	.2941	.3903	.6054	.7752	.1167	.9969	1.9938
22.3.3	.2940	.2940	.3900	.6051	.7749	.1166	.9969	1.9938
22.3.4	.2939	.2939	.3896	.6048	.7746	.1165	.9969	1.9938
22.3.5	.2938	.2938	.3892	.6045	.7743	.1164	.9969	1.9938
22.3.6	.2937	.2937	.3888	.6042	.7740	.1163	.9969	1.9938
22.3.7	.2936	.2936	.3884	.6039	.7737	.1162	.9969	1.9938
22.3.8	.2935	.2935	.3880	.6036	.7734	.1161	.9969	1.9938
22.3.9	.2934	.2934	.3876	.6033	.7731	.1160	.9969	1.9938
22.4.0	.2933	.2933	.3872	.6030	.7728	.1159	.9969	1.9938
22.4.1	.2932	.2932	.3868	.6027	.7725	.1158	.9969	1.9938
22.4.2	.2931	.2931	.3864	.6024	.7722	.1157	.9969	1.9938
22.4.3	.2930	.2930	.3860	.6021	.7719	.1156	.9969	1.9938
22.4.4	.2929	.2929	.3856	.6018	.7716	.1155	.9969	1.9938
22.4.5	.2928	.2928	.3852	.6015	.7713	.1154	.9969	1.9938
22.4.6	.2927	.2927	.3848	.6012	.7710	.1153	.9969	1.9938
22.4.7	.2926	.2926	.3844	.6009	.7707	.1152	.9969	1.9938
22.4.8	.2925	.2925	.3840	.6006	.7704	.1151	.9969	1.9938
22.4.9	.2924	.2924	.3836	.6003	.7701	.1150	.9969	1.9938
22.5.0	.2923	.2923	.3832	.6000	.7698	.1149	.9969	1.9938
22.5.1	.2922	.2922	.3828	.5997	.7695	.1148	.9969	1.9938
22.5.2	.2921	.2921	.3824	.5994	.7692	.1147	.9969	1.9938
22.5.3	.2920	.2920	.3820	.5991	.7689	.1146	.9969	1.9938
22.5.4	.2919	.2919	.3816	.5988	.7686	.1145	.9969	1.9938
22.5.5	.2918	.2918	.3812	.5985	.7683	.1144	.9969	1.9938
22.5.6	.2917	.2917	.3808	.5982	.7680	.1143	.9969	1.9938
22.5.7	.2916	.2916	.3804	.5979	.7677	.1142	.9969	1.9938
22.5.8	.2915	.2915	.3800	.5976	.7674	.1141	.9969	1.9938
22.5.9	.2914	.2914	.3796	.5973	.7671	.1140	.9969	1.9938
22.6.0	.2913	.2913	.3792	.5970	.7668	.1139	.9969	1.9938
22.6.1	.2912	.2912	.3788	.5967	.7665	.1138	.9969	1.9938
22.6.2	.2911	.2911	.3784	.5964	.7662	.1137	.9969	1.9938
22.6.3	.2910	.2910	.3780	.5961	.7659	.1136	.9969	1.9938
22.6.4	.2909	.2909	.3776	.5958	.7656	.1135	.9969	1.9938
22.6.5	.2908	.2908	.3772	.5955	.7653	.1134	.9969	1.9938
22.6.6	.2907	.2907	.3768	.5952	.7650	.1133	.9969	1.9938
22.6.7	.2906	.2906	.3764	.5949	.7647	.1132	.9969	1.9938
22.6.8	.2905	.2905	.3760	.5946	.7644	.1131	.9969	1.9938
22.6.9	.2904	.2904	.3756	.5943	.7641	.1130	.9969	1.9938
22.7.0	.2903	.2903	.3752	.5940	.7638	.1129	.9969	1.9938
22.7.1	.2902	.2902	.3748	.5937	.7635	.1128	.9969	1.9938
22.7.2	.2901	.2901	.3744	.5934	.7632	.1127	.9969	1.9938
22.7.3	.2900	.2900	.3740	.5931	.7629	.1126	.9969	1.9938
22.7.4	.2899	.2899	.3736	.5928	.7626	.1125	.9969	1.9938
22.7.5	.2898	.2898	.3732	.5925	.7623	.1124	.9969	1.9938
22.7.6	.2897	.2897	.3728	.5922	.7620	.1123	.9969	1.9938
22.7.7	.2896	.2896	.3724	.5919	.7617	.1122	.9969	1.9938
22.7.8	.2895	.2895	.3720	.5916	.7614	.1121	.9969	1.9938
22.7.9	.2894	.2894	.3716	.5913	.7611	.1120	.9969	1.9938
22.8.0	.2893	.2893	.3712	.5910	.7608	.1119	.9969	1.9938
22.8.1	.2892	.2892	.3708	.5907	.7605	.1118	.9969	1.9938
22.8.2	.2891	.2891	.3704	.5904	.7602	.1117	.9969	1.9938
22.8.3	.2890	.2890	.3700	.5901	.7600	.1116	.9969	1.9938
22.8.4	.2889	.2889	.3696	.5898	.7597	.1115	.9969	1.9938
22.8.5	.2888	.2888	.3692	.5895	.7594	.1114	.9969	1.9938
22.8.6	.2887	.2887	.3688	.5892	.7591	.1113	.9969	1.9938
22.8.7	.2886	.2886	.3684	.5889	.7588	.1112	.9969	1.9938
22.8.8	.2885	.2885	.3680	.5886	.7585	.1111	.9969	1.9938
22.8.9	.2884	.2884	.3676	.5883	.7582	.1110	.9969	1.9938
22.8.10	.2883	.2883	.3672	.5880	.7579	.1109	.9969	1.9938
22.8.11	.2882	.2882	.3668	.5877	.7576	.1108	.9969	1.9938
22.8.12	.2881	.2881	.3664	.5874	.7573	.1107	.9969	1.9938
22.8.13	.2880	.2880	.3660	.5871	.7570	.1106	.9969	1.9938
22.8.14	.2879	.2879	.3656	.5868	.7567	.1105	.9969	1.9938
22.8.15	.2878	.2878	.3652	.5865	.7564	.1104	.9969	1.9938
22.8.16	.2877	.2877	.3648	.5862	.7561	.1103	.9969	1.9938
22.8.17	.2876	.2876	.3644	.5859	.7558	.1102	.9969	1.9938
22.8.18	.2875	.2875	.3640	.5856	.7555	.1101	.9969	1.9938
22.8.19	.2874	.2874	.3636	.5853	.7552	.1100	.9969	1.9938
22.8.20	.2873	.2873	.3632	.5850	.7549	.1099	.9969	1.9938
22.8.21	.2872	.2872	.3628	.5847	.7546	.1098	.9969	1.9938
22.8.22	.2871	.2871	.3624	.5844	.7543	.1097	.9969	1.9938
22.8.23	.2870	.2870	.3620	.5841	.7540	.1096	.9969	1.9938
22.8.24	.2869	.2869	.3616	.5838	.7537	.1095	.9969	1.9938
22.8.25	.2868	.2868	.3612	.5835	.7534	.1094	.9969	1.9938
22.8.26	.2867	.2867	.3608	.5832	.7531	.1093	.9969	1.9938
22.8.27	.2866	.2866	.3604	.5829	.7528	.1092	.9969	1.9938
22.8.28	.2865	.2865	.3600	.5826	.7525	.1091	.9969	1.9938
22.8.29	.2864	.2864	.3596	.5823	.7522	.1090	.9969	1.9938
22.8.30	.2863	.2863	.3592	.5820	.7519	.1089	.9969	1.9938
22.8.31	.2862	.2862	.3588	.5817	.7516	.1088	.9969	1.9938
22.8.32	.2861	.2861	.3584	.5814	.7513	.1087	.9969	1.9938
22.8.33	.2860	.2860	.3580	.5811	.7510	.1086	.9969	1.9938
22.8.34	.2859	.2859	.3576	.5808	.7507	.1085	.9969	1.9938
22.8.35	.2858	.2858	.3572	.5805	.7504	.1084	.9969	1.9938
22.8.36	.2857	.2857	.3568	.5802	.7501	.1083	.9969	1.9938
22.8.37	.2856	.2856	.3564	.5799	.7498	.1082	.9969	1.9938
22.8.38	.2855	.2855	.3560	.5796	.7495	.1081	.9969	1.9938
22.8.39	.2854	.2854	.3556	.5793	.7492	.1080	.9969	1.9938
22.8.40	.2853	.2853	.3552	.5790	.7489	.1079	.9969	1.9938
22.8.41	.2852	.2852	.3548	.5787	.7486	.1078	.9969	1.9938
22.8.42	.2851	.2851	.3544	.5784	.7483	.1077	.9969	1.9938
22.8.43	.2850	.2850	.3540	.5781	.7480	.1076	.9969	1.9938
22.8.44	.2849	.2849	.3536	.5778	.7477	.1075	.9969	1.9938

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\nu$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
2.605	82.206	-4487	604.8	3.975	152.1	.8119-2	711.4	28.00
2.604	82.209	-4487	605.3	3.975	152.3	.8116-2	712.0	28.01
2.603	82.213	-4487	605.4	3.975	152.5	.8113-2	713.5	28.03
2.602	82.216	-4487	607.0	3.975	152.7	.8110-2	714.0	28.04
2.601	82.219	-4487	607.5	3.975	152.8	.8104-2	714.6	28.05
2.599	82.223	-4487	608.1	3.975	153.0	.8102-2	715.0	28.06
2.598	82.227	-4487	608.6	3.975	153.1	.8099-2	715.5	28.07
2.597	82.230	-4487	609.2	3.975	153.2	.8096-2	716.0	28.08
2.596	82.234	-4487	609.7	3.975	153.4	.8093-2	717.0	28.09
2.595	82.237	-4487	609.7	3.975	153.4	.8093-2	717.0	28.09
2.593	82.241	-4487	610.3	3.975	153.5	.8090-2	717.6	28.10
2.592	82.244	-4487	610.8	3.975	153.6	.8086-2	718.1	28.11
2.591	82.248	-4487	611.4	3.975	153.8	.8085-2	719.1	28.12
2.590	82.251	-4487	611.9	3.975	153.9	.8082-2	719.6	28.13
2.589	82.255	-4487	612.5	3.975	154.1	.8076-2	720.4	28.14
2.588	82.258	-4487	613.0	3.975	154.2	.8076-2	720.7	28.15
2.586	82.262	-4487	613.6	3.975	154.3	.8074-2	721.1	28.16
2.585	82.265	-4487	614.1	3.975	154.4	.8071-2	721.4	28.17
2.584	82.269	-4487	614.7	3.975	154.5	.8069-2	721.8	28.18
2.583	82.272	-4487	615.2	3.975	154.7	.8066-2	723.3	28.19
2.582	82.276	-4487	615.8	3.975	154.9	.8063-2	724.4	28.20
2.581	82.279	-4487	616.4	3.975	155.0	.8060-2	725.5	28.21
2.579	82.283	-4487	617.5	3.975	155.2	.8054-2	726.3	28.23
2.578	82.286	-4487	618.0	3.975	155.4	.8052-2	727.0	28.24
2.576	82.289	-4487	618.6	3.975	155.6	.8049-2	728.6	28.25
2.575	82.293	-4487	619.7	3.975	155.7	.8046-2	729.0	28.26
2.574	82.296	-4487	620.0	3.975	155.9	.8044-2	729.5	28.27
2.572	82.303	-4487	620.2	3.975	156.0	.8041-2	730.0	28.28
2.571	82.307	-4487	620.8	3.975	156.1	.8040-2	730.0	28.29
2.570	82.310	-4487	621.4	3.975	156.3	.8035-2	730.9	28.30
2.569	82.313	-4486	621.9	3.976	156.4	.8030-2	731.5	28.31
2.568	82.317	-4486	622.5	3.976	156.6	.8027-2	732.9	28.32
2.567	82.320	-4486	623.0	3.976	156.8	.8024-2	733.5	28.33
2.566	82.324	-4486	623.6	3.976	157.0	.8021-2	734.2	28.34
2.564	82.328	-4486	624.1	3.976	157.1	.8019-2	734.8	28.35
2.563	82.331	-4486	624.6	3.976	157.3	.8016-2	735.5	28.36
2.562	82.334	-4486	625.3	3.976	157.4	.8014-2	736.0	28.37
2.561	82.337	-4486	625.8	3.976	157.5	.8011-2	736.0	28.38
2.560	82.341	-4486	626.4	3.976	157.5	.8011-2	736.0	28.39
2.559	82.344	-4486	627.0	3.976	157.7	.8006-2	737.5	28.40
2.558	82.348	-4486	627.5	3.976	157.8	.8006-2	738.0	28.41
2.557	82.351	-4486	628.1	3.976	158.0	.8003-2	738.6	28.42
2.556	82.354	-4486	628.6	3.976	158.2	.8002-2	739.4	28.43
2.555	82.356	-4486	629.2	3.976	158.4	.8001-2	740.0	28.44
2.554	82.361	-4486	629.8	3.976	158.5	.8001-2	740.6	28.45
2.553	82.363	-4486	630.3	3.976	158.7	.8001-2	741.1	28.46
2.552	82.368	-4486	630.9	3.976	158.8	.8001-2	742.1	28.47
2.551	82.371	-4486	631.4	3.976	158.8	.8001-2	742.7	28.48
2.550	82.375	-4486	632.0	3.976	158.9	.8001-2	743.3	28.49
2.547	82.378	-4486	632.6	3.976	159.1	.8001-2	744.1	28.50
2.546	82.381	-4486	633.1	3.976	159.2	.8001-2	744.7	28.51
2.545	82.385	-4486	633.7	3.976	159.3	.8001-2	745.4	28.52
2.543	82.388	-4486	634.3	3.976	159.4	.8001-2	746.0	28.53
2.542	82.392	-4486	634.8	3.977	159.6	.8001-2	746.7	28.54
2.541	82.395	-4486	635.4	3.977	159.8	.8001-2	747.4	28.55
2.539	82.398	-4486	635.9	3.977	159.9	.8001-2	748.0	28.56
2.538	82.402	-4486	636.5	3.977	160.1	.8001-2	748.7	28.57
2.537	82.405	-4486	637.1	3.977	160.2	.8001-2	749.4	28.58
2.536	82.408	-4486	637.6	3.977	160.3	.8001-2	750.0	28.59
2.535	82.412	-4486	638.2	3.977	160.5	.8056-2	750.7	28.60
2.534	82.415	-4486	638.8	3.977	160.6	.8053-2	751.3	28.61
2.533	82.418	-4486	639.3	3.977	160.8	.8051-2	752.7	28.63
2.532	82.422	-4486	640.5	3.977	161.1	.8048-2	753.3	28.64
2.530	82.425	-4486	641.0	3.977	161.1	.8045-2	754.0	28.65
2.529	82.428	-4486	641.6	3.977	161.2	.8043-2	754.7	28.66
2.528	82.432	-4486	642.2	3.977	161.5	.8041-2	755.3	28.67
2.527	82.435	-4486	642.8	3.977	161.6	.8039-2	756.0	28.68
2.526	82.438	-4486	643.4	3.977	161.6	.8039-2	756.0	28.69
2.525	82.445	-4486	643.9	3.977	161.9	.8301-2	757.3	28.70
2.524	82.448	-4486	644.4	3.977	162.0	.8286-2	758.0	28.71
2.523	82.452	-4486	645.0	3.977	162.2	.8285-2	759.3	28.72
2.522	82.455	-4486	645.6	3.977	162.4	.8282-2	760.0	28.73
2.521	82.458	-4486	646.1	3.977	162.6	.8280-2	760.7	28.74
2.520	82.462	-4486	646.7	3.977	162.8	.8278-2	761.3	28.75
2.519	82.465	-4486	647.3	3.977	163.0	.8275-2	762.0	28.76
2.518	82.467	-4486	647.8	3.977	163.2	.8273-2	762.7	28.77
2.517	82.471	-4486	648.4	3.977	163.4	.8270-2	763.3	28.78
2.515	82.475	-4486	649.0	3.977	164.1	.8268-2	763.3	28.79
2.514	82.478	-4486	649.6	3.977	164.3	.8105-2	764.4	28.80
2.513	82.481	-4486	650.1	3.977	165.3	.8103-2	764.7	28.81
2.512	82.485	-4486	650.7	3.977	165.6	.8100-2	765.4	28.82
2.511	82.488	-4486	651.3	3.977	165.9	.8100-2	766.1	28.83
2.510	82.492	-4486	651.9	3.977	166.1	.8100-2	766.8	28.84
2.509	82.494	-4486	652.4	3.977	166.4	.8100-2	767.4	28.85
2.507	82.498	-4486	653.0	3.977	166.6	.8100-2	768.0	28.86
2.506	82.501	-4486	653.5	3.977	166.8	.8100-2	768.6	28.87
2.505	82.504	-4486	654.1	3.977	166.9	.8100-2	769.4	28.88
2.504	82.507	-4486	654.7	3.977	167.0	.8103-2	770.1	28.89
2.503	82.511	-4486	655.3	3.977	167.3	.8104-2	770.7	28.90
2.502	82.514	-4486	655.8	3.977	167.6	.8106-2	771.4	28.91
2.501	82.517	-4486	656.4	3.977	167.8	.8106-2	772.1	28.92
2.500	82.520	-4486	657.0	3.977	168.0	.8106-2	772.7	28.93
4.98	82.524	-4486	657.6	3.977	168.2	.8106-2	773.4	28.94
4.97	82.527	-4486	658.1	3.977	168.5	.8106-2	774.1	28.95
4.96	82.530	-4486	658.7	3.977	168.7	.8106-2	774.8	28.96
4.95	82.533	-4486	659.3	3.977	168.9	.8106-2	775.4	28.97
4.94	82.537	-4486	659.9	3.977	169.1	.8106-2	776.1	28.98
4.93	82.540	-4486	660.4	3.977	169.3	.8106-2	776.8	28.99

TABLE I.- VALUES FOR RATIOS OF

M	$\rho/\rho_t$	$\rho/\rho_t$	$T/T_t$	$s/s_t$	$q/q_t$	$A^*/A$	$V/V_0$	$V/s^*$
23.00	.2388-5	.4235-3	.5639-2	.7509-1	.1053-8	.1300-2	.9972	1.99435
.01	.0383-5	.4204-3	.5634-2	.7506-1	.1051-8	.1299-2	.9972	1.99436
.02	.0378-5	.4204-3	.5634-2	.7503-1	.1050-8	.1297-2	.9972	1.99436
.03	.0373-5	.4204-3	.5634-2	.7500-1	.1049-8	.1295-2	.9972	1.99437
.04	.0367-5	.4204-3	.5634-2	.7493-1	.1047-8	.1293-2	.9972	1.99437
.05	.0362-5	.4204-3	.5634-2	.7490-1	.1046-8	.1291-2	.9972	1.99438
.06	.0357-5	.4204-3	.5634-2	.7484-1	.1045-8	.1289-2	.9972	1.99439
.07	.0352-5	.4199-1	.5634-2	.7480-1	.1044-8	.1287-2	.9972	1.99439
.08	.0347-5	.4194-1	.5634-2	.7474-1	.1043-8	.1285-2	.9972	1.99440
.09	.0342-5	.4191-1	.5634-2	.7468-1	.1041-8	.1283-2	.9972	1.99440
.10	.0337-5	.4180-1	.5634-2	.7477-1	.1039-8	.1282-2	.9972	1.99441
.11	.0332-5	.4175-1	.5634-2	.7474-1	.1038-8	.1281-2	.9972	1.99441
.12	.0328-5	.4169-1	.5634-2	.7467-1	.1035-8	.1279-2	.9972	1.99442
.13	.0323-5	.4164-1	.5634-2	.7463-1	.1033-8	.1278-2	.9972	1.99442
.14	.0318-5	.4159-1	.5634-2	.7459-1	.1031-8	.1276-2	.9972	1.99443
.15	.0313-5	.4154-1	.5634-2	.7455-1	.1031-8	.1274-2	.9972	1.99443
.16	.0309-5	.4149-1	.5634-2	.7451-1	.1030-8	.1272-2	.9972	1.99444
.17	.0304-5	.4143-1	.5634-2	.7448-1	.1029-8	.1270-2	.9972	1.99444
.18	.0300-5	.4137-1	.5634-2	.7445-1	.1027-8	.1269-2	.9972	1.99444
.19	.0295-5	.4132-1	.5634-2	.7442-1	.1027-8	.1269-2	.9972	1.99444
.20	.0281-5	.4127-1	.5643-2	.7445-1	.1026-8	.1267-2	.9972	1.99445
.21	.0276-5	.4121-1	.5643-2	.7442-1	.1025-8	.1265-2	.9972	1.99445
.22	.0271-5	.4116-1	.5643-2	.7439-1	.1024-8	.1263-2	.9972	1.99446
.23	.0266-5	.4111-1	.5643-2	.7436-1	.1023-8	.1261-2	.9972	1.99447
.24	.0261-5	.4106-1	.5643-2	.7433-1	.1021-8	.1259-2	.9972	1.99448
.25	.0256-5	.4101-1	.5643-2	.7429-1	.1019-8	.1256-2	.9972	1.99448
.26	.0251-5	.4096-1	.5643-2	.7426-1	.1017-8	.1254-2	.9972	1.99449
.27	.0246-5	.4090-1	.5643-2	.7423-1	.1015-8	.1252-2	.9972	1.99449
.28	.0241-5	.4084-1	.5650-2	.7420-1	.1014-8	.1253-2	.9972	1.99449
.29	.0236-5	.4079-1	.5650-2	.7416-1	.1014-8	.1253-2	.9972	1.99449
.30	.0231-5	.4074-1	.5649-2	.7413-1	.1013-8	.1251-2	.9972	1.99450
.31	.0226-5	.4069-1	.5649-2	.7410-1	.1010-8	.1249-2	.9973	1.99450
.32	.0221-5	.4064-1	.5649-2	.7407-1	.1009-8	.1246-2	.9973	1.99451
.33	.0216-5	.4059-1	.5648-2	.7404-1	.1008-8	.1245-2	.9973	1.99451
.34	.0211-5	.4054-1	.5647-2	.7401-1	.1006-8	.1243-2	.9973	1.99452
.35	.0206-5	.4049-1	.5646-2	.7397-1	.1005-8	.1242-2	.9973	1.99452
.36	.0201-5	.4045-1	.5646-2	.7394-1	.1004-8	.1240-2	.9973	1.99453
.37	.0196-5	.4040-1	.5645-2	.7391-1	.1003-8	.1239-2	.9973	1.99453
.38	.0191-5	.4036-1	.5645-2	.7388-1	.1001-8	.1237-2	.9973	1.99454
.39	.0186-5	.4031-1	.5645-2	.7385-1	.1000-8	.1235-2	.9973	1.99454
.40	.0181-5	.4026-1	.5645-2	.7382-1	.9998-3	.1235-2	.9973	1.99454
.41	.0176-5	.4021-1	.5644-2	.7379-1	.9998-3	.1234-2	.9973	1.99455
.42	.0171-5	.4017-1	.5644-2	.7376-1	.9997-3	.1234-2	.9973	1.99455
.43	.0166-5	.4012-1	.5644-2	.7373-1	.9996-3	.1232-2	.9973	1.99456
.44	.0161-5	.4007-1	.5643-2	.7370-1	.9995-3	.1232-2	.9973	1.99456
.45	.0156-5	.4002-1	.5643-2	.7367-1	.9994-3	.1230-2	.9973	1.99457
.46	.0151-5	.3997-1	.5643-2	.7364-1	.9993-3	.1229-2	.9973	1.99457
.47	.0146-5	.3992-1	.5642-2	.7361-1	.9992-3	.1228-2	.9973	1.99458
.48	.0141-5	.3987-1	.5642-2	.7358-1	.9990-3	.1228-2	.9973	1.99458
.49	.0136-5	.3982-1	.5641-2	.7355-1	.9987-3	.1228-2	.9973	1.99459
.50	.0131-5	.3977-1	.5640-2	.7352-1	.9984-3	.1228-2	.9973	1.99459
.51	.0126-5	.3971-1	.5639-2	.7350-1	.9982-3	.1228-2	.9973	1.99459
.52	.0121-5	.3966-1	.5639-2	.7347-2	.9980-3	.1228-2	.9973	1.99459
.53	.0116-5	.3961-1	.5638-2	.7344-2	.9979-3	.1228-2	.9973	1.99460
.54	.0111-5	.3956-1	.5638-2	.7341-2	.9978-3	.1228-2	.9973	1.99460
.55	.0106-5	.3951-1	.5638-2	.7338-2	.9977-3	.1228-2	.9973	1.99461
.56	.0101-5	.3946-1	.5637-2	.7335-2	.9976-3	.1228-2	.9973	1.99461
.57	.0096-5	.3941-1	.5637-2	.7332-2	.9975-3	.1228-2	.9973	1.99462
.58	.0091-5	.3936-1	.5636-2	.7329-2	.9974-3	.1228-2	.9973	1.99462
.59	.0086-5	.3931-1	.5636-2	.7326-2	.9973-3	.1228-2	.9973	1.99463
.60	.0081-5	.3926-1	.5636-2	.7323-2	.9972-3	.1228-2	.9973	1.99463
.61	.0076-5	.3921-1	.5636-2	.7320-2	.9971-3	.1228-2	.9973	1.99464
.62	.0071-5	.3916-1	.5636-2	.7317-2	.9970-3	.1228-2	.9973	1.99464
.63	.0066-5	.3911-1	.5636-2	.7314-2	.9969-3	.1228-2	.9973	1.99465
.64	.0061-5	.3906-1	.5636-2	.7311-2	.9968-3	.1228-2	.9973	1.99465
.65	.0056-5	.3901-1	.5635-2	.7308-2	.9967-3	.1228-2	.9973	1.99466
.66	.0051-5	.3896-1	.5635-2	.7305-2	.9966-3	.1228-2	.9973	1.99466
.67	.0046-5	.3891-1	.5635-2	.7302-2	.9965-3	.1228-2	.9973	1.99467
.68	.0041-5	.3886-1	.5635-2	.7299-2	.9965-3	.1228-2	.9973	1.99468
.69	.0036-5	.3881-1	.5635-2	.7296-2	.9964-3	.1228-2	.9973	1.99468
.70	.0031-5	.3876-1	.5635-2	.7293-2	.9964-3	.1228-2	.9973	1.99468
.71	.0026-5	.3871-1	.5635-2	.7290-2	.9963-3	.1228-2	.9973	1.99468
.72	.0021-5	.3866-1	.5635-2	.7287-2	.9963-3	.1228-2	.9973	1.99469
.73	.0016-5	.3861-1	.5635-2	.7284-2	.9962-3	.1228-2	.9973	1.99469
.74	.0011-5	.3856-1	.5635-2	.7281-2	.9962-3	.1228-2	.9973	1.99469
.75	.0006-5	.3851-1	.5635-2	.7278-2	.9961-3	.1228-2	.9973	1.99470
.76	.0001-5	.3846-1	.5635-2	.7275-2	.9960-3	.1228-2	.9973	1.99470
.77	.0006-5	.3841-1	.5635-2	.7272-2	.9959-3	.1228-2	.9974	1.99471
.78	.0001-5	.3836-1	.5635-2	.7269-2	.9958-3	.1228-2	.9974	1.99471
.79	.0006-5	.3831-1	.5635-2	.7266-2	.9957-3	.1228-2	.9974	1.99472
.80	.0001-5	.3826-1	.5635-2	.7263-2	.9956-3	.1228-2	.9974	1.99472
.81	.0006-5	.3821-1	.5635-2	.7260-2	.9955-3	.1228-2	.9974	1.99472
.82	.0001-5	.3816-1	.5635-2	.7257-2	.9954-3	.1228-2	.9974	1.99472
.83	.0006-5	.3811-1	.5635-2	.7254-2	.9953-3	.1228-2	.9974	1.99472
.84	.0001-5	.3806-1	.5635-2	.7251-2	.9952-3	.1228-2	.9974	1.99472
.85	.0006-5	.3801-1	.5635-2	.7248-2	.9951-3	.1228-2	.9974	1.99472
.86	.0001-5	.3796-1	.5635-2	.7245-2	.9950-3	.1228-2	.9974	1.99472
.87	.0006-5	.3791-1	.5635-2	.7242-2	.9949-3	.1228-2	.9974	1.99472
.88	.0001-5	.3786-1	.5635-2	.7239-2	.9948-3	.1228-2	.9974	1.99472
.89	.0006-5	.3781-1	.5635-2	.7236-2	.9947-3	.1228-2	.9974	1.99472
.90	.0001-5	.3776-1	.5635-2	.7233-2	.9946-3	.1228-2	.9974	1.99472
.91	.0006-5	.3771-1	.5635-2	.7230-2	.9945-3	.1228-2	.9974	1.99472
.92	.0001-5	.3766-1	.5635-2	.7227-2	.9944-3	.1228-2	.9974	1.99472
.93	.0006-5	.3761-1	.5635-2	.7224-2	.9943-3	.1228-2	.9974	1.99472
.94	.0001-5	.3756-1	.5635-2	.7221-2	.9942-3	.1228-2	.9974	1.99472
.95	.0006-5	.3751-1	.5635-2	.7218-2	.9941-3	.1228-2	.9974	1.99472
.96	.0001-5	.3746-1	.5635-2	.7215-2	.9940-3	.1228-2	.9974	1.99472
.97	.0006-5	.3741-1	.5635-2	.7212-2	.9939-3	.1228-2	.9974	1.99472
.98	.0001-5	.3736-1	.5635-2	.7209-2	.9938-3	.1228-2	.9974	1.99472
.99	.0006-5	.3731-1	.5635-2	.7206-2	.9937-3	.1228-2	.9974	1.99472

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\nu$	$M_2$	$P_2/P_1$	$P_3/P_1$	$T_3/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/\bar{P}_1$	$M$
2.4.98								
2.4.91	82.543	.4486	61.0	3.977	166.2	.1857-2	777.5	2.33.010
2.4.90	82.546	.4486	61.6	3.977	166.3	.1854-2	778.1	2.33.012
2.4.88	82.553	.4486	62.2	3.977	166.8	.1852-2	778.6	2.33.014
2.4.86	82.556	.4486	63.3	3.978	166.9	.1849-2	779.5	2.33.016
2.4.85	82.559	.4486	64.5	3.978	167.1	.1845-2	780.2	2.33.018
2.4.83	82.562	.4486	65.0	3.978	167.2	.1842-2	780.9	2.33.020
2.4.82	82.566	.4486	65.6	3.978	167.3	.1837-2	781.6	2.33.022
2.4.80	82.569	.4486	66.0	3.978	167.5	.1835-2	782.3	2.33.024
2.4.78	82.572	.4486	66.6	3.978	167.6	.1833-2	783.0	2.33.026
2.4.76	82.575	.4486	67.3	3.978	167.6	.1830-2	784.9	2.33.110
2.4.74	82.578	.4486	67.9	3.978	167.8	.1828-2	785.6	2.33.122
2.4.72	82.582	.4486	68.5	3.978	168.1	.1826-2	786.3	2.33.134
2.4.70	82.585	.4486	69.1	3.978	168.4	.1824-2	787.0	2.33.146
2.4.68	82.588	.4486	69.7	3.978	168.7	.1821-2	787.7	2.33.158
2.4.66	82.591	.4486	70.3	3.978	169.0	.1819-2	788.3	2.33.170
2.4.64	82.594	.4486	70.8	3.978	169.6	.1816-2	789.0	2.33.182
2.4.63	82.595	.4486	71.4	3.978	169.9	.1814-2	789.7	2.33.194
2.4.61	82.601	.4486	72.0	3.978	169.9	.1812-2	790.4	2.33.206
2.4.70	82.607	.4485	67.2	3.978	168.2	.1809-2	791.0	2.33.208
2.4.69	82.610	.4485	67.9	3.978	168.5	.1807-2	791.7	2.33.212
2.4.68	82.613	.4485	68.7	3.978	168.8	.1805-2	792.4	2.33.223
2.4.67	82.617	.4485	69.5	3.978	169.1	.1803-2	793.1	2.33.234
2.4.66	82.620	.4485	70.2	3.978	169.4	.1800-2	793.8	2.33.245
2.4.64	82.623	.4485	70.9	3.978	169.8	.1796-2	794.5	2.33.257
2.4.63	82.626	.4485	71.6	3.978	170.1	.1793-2	795.2	2.33.269
2.4.61	82.629	.4485	72.3	3.978	170.2	.1791-2	795.9	2.33.280
2.4.60	82.633	.4485	72.9	3.978	170.4	.1789-2	797.2	2.33.292
2.4.59	82.639	.4485	78.4	3.978	170.5	.1786-2	797.9	2.33.304
2.4.58	82.642	.4485	79.9	3.978	170.7	.1784-2	798.6	2.33.316
2.4.56	82.645	.4485	80.5	3.978	171.0	.1782-2	799.3	2.33.328
2.4.55	82.648	.4485	81.1	3.978	171.3	.1777-2	800.0	2.33.340
2.4.53	82.651	.4485	81.7	3.978	171.6	.1775-2	801.7	2.33.352
2.4.52	82.654	.4485	82.3	3.978	171.9	.1773-2	802.4	2.33.364
2.4.51	82.657	.4485	83.9	3.978	172.4	.1771-2	803.1	2.33.376
2.4.50	82.661	.4485	84.5	3.978	172.5	.1770-2	803.8	2.33.388
2.4.49	82.664	.4485	85.0	3.978	172.7	.1768-2	804.4	2.33.399
2.4.48	82.670	.4485	68.4	3.978	172.0	.1764-2	804.7	2.33.410
2.4.47	82.673	.4485	68.8	3.978	172.1	.1762-2	805.4	2.33.422
2.4.46	82.676	.4485	69.4	3.978	172.3	.1759-2	806.1	2.33.434
2.4.45	82.679	.4485	69.8	3.978	172.4	.1757-2	806.8	2.33.446
2.4.44	82.682	.4485	70.5	3.978	172.6	.1755-2	807.5	2.33.458
2.4.43	82.686	.4485	71.1	3.978	172.9	.1753-2	808.2	2.33.470
2.4.42	82.689	.4485	71.7	3.978	173.0	.1750-2	808.9	2.33.482
2.4.41	82.695	.4485	72.3	3.978	173.3	.1748-2	809.6	2.33.494
2.4.40	82.698	.4485	68.9	3.978	173.4	.1746-2	810.3	2.33.506
2.4.39	82.701	.4485	69.5	3.978	173.4	.1744-2	810.9	2.33.518
2.4.38	82.704	.4485	70.2	3.978	173.5	.1742-2	811.6	2.33.530
2.4.37	82.707	.4485	70.8	3.978	173.7	.1739-2	812.3	2.33.542
2.4.36	82.710	.4485	71.4	3.978	173.9	.1737-2	813.7	2.33.554
2.4.35	82.713	.4485	72.0	3.978	174.0	.1735-2	814.4	2.33.566
2.4.34	82.716	.4485	72.6	3.978	174.3	.1731-2	815.1	2.33.578
2.4.33	82.720	.4485	73.2	3.978	174.5	.1728-2	815.8	2.33.590
2.4.32	82.723	.4485	73.8	3.978	174.6	.1726-2	816.5	2.33.602
2.4.31	82.726	.4485	74.4	3.978	174.8	.1724-2	817.2	2.33.614
2.4.30	82.729	.4485	75.0	3.978	174.9	.1722-2	817.8	2.33.626
2.4.29	82.732	.4485	69.6	3.978	174.5	.1720-2	818.5	2.33.638
2.4.28	82.735	.4485	69.7	3.978	175.1	.1718-2	819.2	2.33.650
2.4.26	82.741	.4485	69.7	3.978	175.4	.1715-2	819.9	2.33.662
2.4.25	82.744	.4485	69.8	3.978	175.5	.1713-2	820.6	2.33.674
2.4.24	82.747	.4485	69.9	3.978	175.5	.1711-2	821.3	2.33.686
2.4.23	82.750	.4485	69.9	3.978	175.6	.1709-2	822.0	2.33.698
2.4.22	82.753	.4485	70.0	3.978	175.6	.1707-2	822.7	2.33.710
2.4.21	82.756	.4485	70.0	3.978	175.7	.1705-2	823.4	2.33.722
2.4.20	82.759	.4485	70.1	3.978	175.7	.1703-2	824.1	2.33.734
2.4.19	82.762	.4485	69.6	3.978	175.8	.1701-2	824.8	2.33.746
2.4.18	82.765	.4485	70.1	3.978	176.4	.1698-2	825.5	2.33.758
2.4.17	82.766	.4485	70.2	3.978	176.6	.1696-2	826.2	2.33.770
2.4.16	82.768	.4485	70.3	3.978	176.7	.1694-2	826.9	2.33.782
2.4.15	82.770	.4485	70.3	3.978	176.9	.1692-2	827.6	2.33.794
2.4.14	82.772	.4485	70.4	3.978	177.0	.1690-2	828.3	2.33.806
2.4.13	82.775	.4485	70.4	3.978	177.1	.1688-2	829.0	2.33.818
2.4.12	82.778	.4485	70.4	3.978	177.1	.1686-2	829.7	2.33.830
2.4.11	82.781	.4485	70.5	3.978	177.3	.1684-2	830.4	2.33.842
2.4.10	82.784	.4485	70.6	3.978	177.4	.1682-2	831.1	2.33.854
2.4.09	82.787	.4485	70.6	3.978	177.5	.1681-2	831.8	2.33.866
2.4.08	82.790	.4485	70.7	3.978	177.7	.1679-2	832.5	2.33.878
2.4.07	82.793	.4485	70.7	3.978	177.7	.1677-2	833.2	2.33.890
2.4.06	82.796	.4485	70.8	3.978	178.0	.1675-2	833.9	2.33.902
2.4.05	82.799	.4485	70.8	3.978	178.2	.1673-2	834.6	2.33.914
2.4.04	82.803	.4485	70.9	3.978	178.3	.1671-2	835.3	2.33.926
2.4.03	82.806	.4485	71.0	3.978	178.5	.1669-2	836.0	2.33.938
2.4.02	82.811	.4485	71.1	3.978	178.6	.1667-2	836.7	2.33.950
2.4.01	82.814	.4485	71.2	3.978	178.7	.1665-2	837.4	2.33.962
2.4.00	82.817	.4485	71.2	3.978	179.1	.1663-2	838.1	2.33.974
2.3.59	82.820	.4485	71.3	3.978	179.2	.1660-2	838.8	2.33.986
2.3.58	82.823	.4485	71.3	3.979	179.4	.1657-2	839.5	2.33.998
2.3.57	82.826	.4485	71.4	3.979	179.5	.1654-2	840.2	2.33.910
2.3.56	82.829	.4485	71.5	3.979	179.7	.1652-2	840.9	2.33.922
2.3.55	82.832	.4485	71.5	3.979	179.8	.1650-2	841.6	2.33.934
2.3.54	82.834	.4485	71.6	3.979	179.8	.1649-2	842.3	2.33.946
2.3.53	82.836	.4485	71.6	3.979	179.9	.1648-2	843.0	2.33.958
2.3.52	82.841	.4485	71.7	3.979	180.0	.1646-2	843.7	2.33.970
2.3.51	82.844	.4485	71.7	3.979	180.0	.1644-2	844.4	2.33.982
2.3.50	82.847	.4485	71.8	3.979	180.0	.1642-2	845.1	2.33.994
2.3.49	82.850	.4485	71.9	3.979	180.0	.1639-2	845.8	2.33.999

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/q <sub>t</sub>	A°/A	V/V <sub>0</sub>	V/V°
24.4.0.0	.1.932-5	.3730-3	.5181-2	.7198-1	.9276-3	.1145-2	.9974	1.99481
24.4.0.01	.1.928-5	.3725-3	.5177-2	.7195-1	.9264-3	.1144-2	.9974	1.99482
24.4.0.02	.1.924-5	.3720-3	.5173-2	.7192-1	.9253-3	.1143-2	.9974	1.99483
24.4.0.03	.1.920-5	.3716-3	.5166-2	.7189-1	.9241-3	.1142-2	.9974	1.99483
24.4.0.04	.1.916-5	.3721-3	.5160-2	.7186-1	.9230-3	.1140-2	.9974	1.99483
24.4.0.05	.1.912-5	.3717-3	.5155-2	.7183-1	.9218-3	.1139-2	.9974	1.99483
24.4.0.06	.1.908-5	.3713-3	.5149-2	.7180-1	.9206-3	.1138-2	.9974	1.99483
24.4.0.07	.1.905-5	.3669-3	.5144-2	.7174-1	.9196-3	.1136-2	.9974	1.99483
24.4.0.08	.1.901-5	.3665-3	.5140-2	.7171-1	.9184-3	.1133-2	.9974	1.99483
24.4.0.09	.1.897-5	.3660-3	.5134-2	.7168-1	.9173-3	.1133-2	.9974	1.99483
24.4.1.10	.1.893-5	.3656-3	.5130-2	.7165-1	.9162-3	.1133-2	.9974	1.99483
24.4.1.11	.1.889-5	.3652-3	.5124-2	.7162-1	.9150-3	.1132-2	.9974	1.99483
24.4.1.12	.1.885-5	.3648-3	.5119-2	.7159-1	.9138-3	.1132-2	.9974	1.99483
24.4.1.13	.1.881-5	.3644-3	.5114-2	.7156-1	.9126-3	.1132-2	.9974	1.99483
24.4.1.14	.1.877-5	.3640-3	.5109-2	.7153-1	.9115-3	.1132-2	.9974	1.99483
24.4.1.15	.1.873-5	.3636-3	.5104-2	.7150-1	.9104-3	.1132-2	.9974	1.99483
24.4.1.16	.1.869-5	.3632-3	.5099-2	.7147-1	.9093-3	.1132-2	.9974	1.99483
24.4.1.17	.1.866-5	.3628-3	.5094-2	.7144-1	.9082-3	.1132-2	.9974	1.99483
24.4.1.18	.1.862-5	.3624-3	.5089-2	.7141-1	.9071-3	.1132-2	.9974	1.99483
24.4.1.19	.1.858-5	.3620-3	.5084-2	.7138-1	.9061-3	.1132-2	.9974	1.99483
24.4.2.20	.1.854-5	.3616-3	.5079-2	.7135-1	.9050-3	.1131-2	.9974	1.99483
24.4.2.21	.1.850-5	.3612-3	.5074-2	.7132-1	.9039-3	.1131-2	.9974	1.99483
24.4.2.22	.1.846-5	.3608-3	.5069-2	.7129-1	.9028-3	.1131-2	.9974	1.99483
24.4.2.23	.1.842-5	.3604-3	.5064-2	.7126-1	.9016-3	.1131-2	.9974	1.99483
24.4.2.24	.1.838-5	.3600-3	.5059-2	.7123-1	.9005-3	.1131-2	.9974	1.99483
24.4.2.25	.1.834-5	.3596-3	.5054-2	.7120-1	.8994-3	.1131-2	.9974	1.99483
24.4.2.26	.1.830-5	.3592-3	.5049-2	.7117-1	.8983-3	.1131-2	.9974	1.99483
24.4.2.27	.1.826-5	.3588-3	.5044-2	.7114-1	.8972-3	.1131-2	.9974	1.99483
24.4.2.28	.1.822-5	.3584-3	.5039-2	.7111-1	.8961-3	.1131-2	.9974	1.99483
24.4.2.29	.1.818-5	.3580-3	.5034-2	.7108-1	.8950-3	.1131-2	.9974	1.99483
24.4.3.30	.1.814-5	.3576-3	.5029-2	.7105-1	.8939-3	.1130-2	.9974	1.99483
24.4.3.31	.1.810-5	.3572-3	.5024-2	.7102-1	.8928-3	.1130-2	.9974	1.99483
24.4.3.32	.1.806-5	.3568-3	.5019-2	.7099-1	.8917-3	.1130-2	.9974	1.99483
24.4.3.33	.1.802-5	.3564-3	.5014-2	.7096-1	.8906-3	.1130-2	.9974	1.99483
24.4.3.34	.1.798-5	.3560-3	.5009-2	.7093-1	.8895-3	.1130-2	.9974	1.99483
24.4.3.35	.1.794-5	.3556-3	.5004-2	.7090-1	.8884-3	.1130-2	.9974	1.99483
24.4.3.36	.1.790-5	.3552-3	.5000-2	.7087-1	.8873-3	.1130-2	.9974	1.99483
24.4.3.37	.1.786-5	.3548-3	.4995-2	.7084-1	.8862-3	.1130-2	.9974	1.99483
24.4.3.38	.1.782-5	.3544-3	.4990-2	.7081-1	.8851-3	.1130-2	.9974	1.99483
24.4.4.39	.1.778-5	.3540-3	.4985-2	.7078-1	.8840-3	.1130-2	.9974	1.99483
24.4.4.40	.1.774-5	.3536-3	.4980-2	.7075-1	.8829-3	.1130-2	.9974	1.99483
24.4.4.41	.1.770-5	.3532-3	.4975-2	.7072-1	.8818-3	.1130-2	.9974	1.99483
24.4.4.42	.1.766-5	.3528-3	.4970-2	.7069-1	.8807-3	.1130-2	.9974	1.99483
24.4.4.43	.1.762-5	.3524-3	.4965-2	.7066-1	.8796-3	.1130-2	.9974	1.99483
24.4.4.44	.1.758-5	.3520-3	.4960-2	.7063-1	.8785-3	.1130-2	.9974	1.99483
24.4.4.45	.1.754-5	.3516-3	.4955-2	.7060-1	.8774-3	.1130-2	.9974	1.99483
24.4.4.46	.1.750-5	.3512-3	.4950-2	.7057-1	.8763-3	.1130-2	.9974	1.99483
24.4.4.47	.1.746-5	.3508-3	.4945-2	.7054-1	.8752-3	.1130-2	.9974	1.99483
24.4.4.48	.1.742-5	.3504-3	.4940-2	.7051-1	.8741-3	.1130-2	.9974	1.99483
24.4.4.49	.1.738-5	.3500-3	.4935-2	.7048-1	.8730-3	.1130-2	.9974	1.99483
24.4.5.50	.1.734-5	.3496-3	.4930-2	.7045-1	.8719-3	.1130-2	.9974	1.99483
24.4.5.51	.1.730-5	.3492-3	.4925-2	.7042-1	.8708-3	.1130-2	.9974	1.99483
24.4.5.52	.1.726-5	.3488-3	.4920-2	.7039-1	.8697-3	.1130-2	.9974	1.99483
24.4.5.53	.1.722-5	.3484-3	.4915-2	.7036-1	.8686-3	.1130-2	.9974	1.99483
24.4.5.54	.1.718-5	.3480-3	.4910-2	.7033-1	.8675-3	.1130-2	.9974	1.99483
24.4.5.55	.1.714-5	.3476-3	.4905-2	.7030-1	.8664-3	.1130-2	.9974	1.99483
24.4.5.56	.1.710-5	.3472-3	.4900-2	.7027-1	.8653-3	.1130-2	.9974	1.99483
24.4.5.57	.1.706-5	.3468-3	.4895-2	.7024-1	.8642-3	.1130-2	.9974	1.99483
24.4.5.58	.1.702-5	.3464-3	.4890-2	.7021-1	.8631-3	.1130-2	.9974	1.99483
24.4.5.59	.1.698-5	.3460-3	.4885-2	.7018-1	.8620-3	.1130-2	.9974	1.99483
24.4.6.60	.1.694-5	.3456-3	.4880-2	.7015-1	.8609-3	.1130-2	.9974	1.99483
24.4.6.61	.1.690-5	.3452-3	.4875-2	.7012-1	.8598-3	.1130-2	.9974	1.99483
24.4.6.62	.1.686-5	.3448-3	.4870-2	.7009-1	.8587-3	.1130-2	.9974	1.99483
24.4.6.63	.1.682-5	.3444-3	.4865-2	.7006-1	.8576-3	.1130-2	.9974	1.99483
24.4.6.64	.1.678-5	.3440-3	.4860-2	.7003-1	.8565-3	.1130-2	.9974	1.99483
24.4.6.65	.1.674-5	.3436-3	.4855-2	.7000-1	.8554-3	.1130-2	.9974	1.99483
24.4.6.66	.1.670-5	.3432-3	.4850-2	.6997-1	.8543-3	.1130-2	.9974	1.99483
24.4.6.67	.1.666-5	.3428-3	.4845-2	.6994-1	.8532-3	.1130-2	.9974	1.99483
24.4.6.68	.1.662-5	.3424-3	.4840-2	.6991-1	.8521-3	.1130-2	.9974	1.99483
24.4.6.69	.1.658-5	.3420-3	.4835-2	.6988-1	.8510-3	.1130-2	.9974	1.99483
24.4.7.70	.1.654-5	.3416-3	.4830-2	.6985-1	.8500-3	.1130-2	.9974	1.99483
24.4.7.71	.1.650-5	.3412-3	.4825-2	.6982-1	.8489-3	.1130-2	.9974	1.99483
24.4.7.72	.1.646-5	.3408-3	.4820-2	.6979-1	.8478-3	.1130-2	.9974	1.99483
24.4.7.73	.1.642-5	.3404-3	.4815-2	.6976-1	.8467-3	.1130-2	.9974	1.99483
24.4.7.74	.1.638-5	.3400-3	.4810-2	.6973-1	.8456-3	.1130-2	.9974	1.99483
24.4.7.75	.1.634-5	.3396-3	.4805-2	.6970-1	.8445-3	.1130-2	.9974	1.99483
24.4.7.76	.1.630-5	.3392-3	.4800-2	.6967-1	.8434-3	.1130-2	.9974	1.99483
24.4.7.77	.1.626-5	.3388-3	.4795-2	.6964-1	.8423-3	.1130-2	.9974	1.99483
24.4.7.78	.1.622-5	.3384-3	.4790-2	.6961-1	.8412-3	.1130-2	.9974	1.99483
24.4.7.79	.1.618-5	.3380-3	.4785-2	.6958-1	.8401-3	.1130-2	.9974	1.99483
24.4.8.80	.1.614-5	.3376-3	.4780-2	.6955-1	.8390-3	.1130-2	.9974	1.99483
24.4.8.81	.1.610-5	.3372-3	.4775-2	.6952-1	.8379-3	.1130-2	.9974	1.99483
24.4.8.82	.1.606-5	.3368-3	.4770-2	.6949-1	.8368-3	.1130-2	.9974	1.99483
24.4.8.83	.1.602-5	.3364-3	.4765-2	.6946-1	.8357-3	.1130-2	.9974	1.99483
24.4.8.84	.1.598-5	.3360-3	.4760-2	.6943-1	.8346-3	.1130-2	.9974	1.99483
24.4.8.85	.1.594-5	.3356-3	.4755-2	.6940-1	.8335-3	.1130-2	.9974	1.99483
24.4.8.86	.1.590-5	.3352-3	.4750-2	.6937-1	.8324-3	.1130-2	.9974	1.99483
24.4.8.87	.1.586-5	.3348-3	.4745-2	.6934-1	.8313-3	.1130-2	.9974	1.99483
24.4.8.88	.1.582-5	.3344-3	.4740-2	.6931-1	.8302-3	.1130-2	.9974	1.99483
24.4.8.89	.1.578-5	.3340-3	.4735-2	.6928-1	.8291-3	.1130-2	.9974	1.99483
24.4.8.90	.1.574-5	.3336-3	.4730-2	.6925-1	.8280-3	.1130-2	.9974	1.99483
24.4.8.91	.1.570-5	.3332-3	.4725-2	.6922-1	.8269-3	.1130-2	.9974	1.99483
24.4.8.92	.1.566-5	.3328-3	.4720-2	.6919-1	.8258-3	.1130-2	.9974	1.99483
24.4.8.93	.1.562-5	.3324-3	.4715-2	.6916-1	.8247-3	.1130-2	.9974	1.99483
24.4.8.94	.1.558-5	.3320-3	.4710-2	.6913-1	.8236-3	.1130-2	.9974	1.99483
24.4.8.95	.1.554-5	.3316-3	.4705-2	.6910-1	.8225-3	.1130-2	.9974	1.99483
24.4.8.96	.1.550-5	.3312-3	.4700-2	.6907-1	.8214-3	.1130-2	.9974	1.99483
24.4.8.97	.1.546-5	.3308-3	.4695-2	.6904-1	.8203-3	.1130-2	.9974	1.99483
24.4.8.98	.1.542-5	.3304-3	.4690-2	.6901-1	.8192-3	.1130-2	.9974	1.99483
24.4.8.99	.1.538-5	.3300-3	.4685-2	.6898-1	.8181-3	.1130-2	.9974	1.99483

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$p_2/p_1$	$p_2/p_1$	$T_2/T_1$	$p_{t,2}/p_{t,1}$	$p_{t,2}/p_1$	$M$
2.386	82.855	.4485	719.8	3.979	180.9	.1636-2	846.5	24.00
2.386	82.855	.4485	720.4	3.979	181.0	.1634-2	847.2	24.01
2.386	82.855	.4485	721.0	3.979	181.3	.1630-2	848.9	24.03
2.384	82.854	.4485	722.2	3.979	181.5	.1628-2	849.3	24.04
2.383	82.857	.4484	722.8	3.979	181.6	.1626-2	850.0	24.05
2.382	82.870	.4484	723.4	3.979	181.8	.1624-2	850.7	24.06
2.381	82.873	.4484	724.0	3.979	181.9	.1622-2	851.4	24.07
2.380	82.875	.4484	724.6	3.979	182.1	.1620-2	852.2	24.08
2.379	82.879	.4484	725.2	3.979	182.2	.1618-2	852.9	24.09
2.378	82.882	.4484	725.8	3.979	182.4	.1616-2	853.6	24.10
2.376	82.885	.4484	726.4	3.979	182.7	.1614-2	854.3	24.11
2.375	82.888	.4484	727.0	3.979	182.8	.1612-2	855.0	24.12
2.374	82.894	.4484	728.8	3.980	183.0	.1610-2	855.7	24.13
2.373	82.897	.4484	729.4	3.980	183.1	.1608-2	856.4	24.14
2.372	82.900	.4484	730.0	3.980	183.1	.1606-2	857.1	24.15
2.371	82.903	.4484	730.6	3.980	183.2	.1604-2	857.8	24.16
2.370	82.905	.4484	731.2	3.980	183.4	.1602-2	858.5	24.17
2.369	82.908	.4484	731.8	3.980	183.6	.1600-2	859.2	24.18
2.368	82.911	.4484	732.4	3.980	183.9	.1596-2	860.7	24.20
2.367	82.914	.4484	733.0	3.980	184.0	.1594-2	861.4	24.21
2.366	82.917	.4484	733.6	3.980	184.2	.1592-2	862.1	24.22
2.365	82.920	.4484	734.2	3.980	184.5	.1589-2	862.8	24.23
2.364	82.922	.4484	734.8	3.980	184.6	.1587-2	863.5	24.24
2.363	82.925	.4484	735.4	3.980	184.8	.1584-2	864.2	24.25
2.362	82.929	.4484	736.0	3.980	184.9	.1582-2	865.7	24.27
2.361	82.932	.4484	736.6	3.980	185.1	.1580-2	866.4	24.28
2.360	82.935	.4484	737.3	3.980	185.3	.1578-2	867.1	24.29
2.359	82.937	.4484	737.9	3.980	185.5	.1576-2		
2.358	82.940	.4484	737.9	3.980	185.6	.1576-2	867.8	24.30
2.357	82.943	.4484	739.4	3.980	185.7	.1575-2	868.5	24.32
2.356	82.946	.4484	739.7	3.980	185.9	.1574-2	869.2	24.33
2.355	82.949	.4484	740.3	3.980	186.0	.1573-2	869.9	24.34
2.354	82.952	.4484	740.7	3.980	186.1	.1569-2	870.6	24.35
2.353	82.955	.4484	741.3	3.980	186.2	.1567-2	871.3	24.36
2.352	82.958	.4484	741.9	3.980	186.3	.1565-2	872.1	24.37
2.351	82.961	.4484	742.5	3.980	186.5	.1563-2	872.8	24.38
2.350	82.963	.4484	743.1	3.980	186.6	.1561-2	873.5	24.39
2.349	82.966	.4484	744.0	3.980	186.8	.1559-2	874.3	24.40
2.348	82.972	.4484	744.6	3.980	186.9	.1557-2	875.7	24.41
2.347	82.975	.4484	745.2	3.980	187.1	.1555-2	876.4	24.42
2.346	82.976	.4484	745.8	3.980	187.4	.1553-2	877.1	24.43
2.345	82.981	.4484	746.4	3.980	187.5	.1550-2	877.8	24.44
2.344	82.984	.4484	747.0	3.980	187.7	.1548-2	878.5	24.45
2.343	82.986	.4484	747.6	3.980	187.8	.1546-2	879.3	24.46
2.342	82.989	.4484	748.2	3.980	188.0	.1544-2	880.0	24.47
2.341	82.992	.4484	748.8	3.980	188.1	.1542-2	880.7	24.48
2.340	82.995	.4484	749.5	3.980	188.3	.1540-2	881.4	24.49
2.339	82.998	.4484	750.1	3.980	188.5	.1538-2	882.1	24.50
2.338	83.001	.4484	750.7	3.980	188.6	.1537-2	882.8	24.51
2.337	83.003	.4484	751.3	3.980	188.8	.1535-2	883.6	24.53
2.336	83.006	.4484	751.9	3.980	188.9	.1533-2	884.3	24.54
2.335	83.009	.4484	752.5	3.980	189.1	.1531-2	885.0	24.55
2.334	83.012	.4484	753.1	3.980	189.4	.1529-2	885.7	24.56
2.333	83.015	.4484	753.7	3.980	189.5	.1528-2	886.4	24.57
2.332	83.018	.4484	754.4	3.980	189.6	.1526-2	887.1	24.58
2.331	83.020	.4484	755.0	3.980	189.7	.1525-2	887.9	24.59
2.330	83.023	.4484	755.6	3.980	189.8	.1523-2	888.6	24.60
2.329	83.025	.4484	756.2	3.980	189.9	.1521-2	889.3	24.61
2.328	83.027	.4484	756.8	3.980	190.0	.1519-2	889.9	24.62
2.327	83.030	.4484	757.4	3.980	190.1	.1518-2	890.6	24.63
2.326	83.033	.4484	758.0	3.980	190.2	.1517-2	891.3	24.64
2.325	83.037	.4484	758.7	3.980	190.4	.1516-2	892.0	24.65
2.324	83.040	.4484	759.3	3.980	190.6	.1515-2	892.7	24.66
2.323	83.043	.4484	759.9	3.980	190.9	.1513-2	893.4	24.67
2.322	83.046	.4484	760.5	3.980	191.1	.1512-2	894.1	24.68
2.321	83.049	.4484	761.1	3.980	191.3	.1511-2	894.8	24.69
2.320	83.051	.4484	761.7	3.980	191.4	.1510-2	895.5	24.69
2.319	83.054	.4484	762.4	3.981	191.5	.1508-2		
2.318	83.057	.4484	763.0	3.981	191.7	.1506-2	896.6	24.70
2.317	83.060	.4484	763.6	3.981	191.8	.1504-2	897.3	24.71
2.316	83.063	.4484	764.2	3.981	192.0	.1492-2	898.0	24.72
2.315	83.065	.4484	764.8	3.981	192.1	.1490-2	898.8	24.73
2.314	83.068	.4484	765.5	3.981	192.3	.1489-2	899.5	24.74
2.313	83.071	.4484	766.1	3.981	192.5	.1487-2	900.2	24.75
2.312	83.074	.4484	766.7	3.981	192.6	.1485-2	901.7	24.77
2.311	83.077	.4484	767.3	3.981	192.8	.1483-2	902.4	24.78
2.310	83.079	.4484	767.9	3.981	193.0	.1481-2	903.1	24.79
2.309	83.082	.4484	768.6	3.981	193.1	.1480-2		
2.308	83.085	.4484	769.2	3.981	193.2	.1478-2	904.6	24.81
2.307	83.088	.4484	769.8	3.981	193.4	.1476-2	905.3	24.83
2.306	83.090	.4484	770.4	3.981	193.5	.1474-2	906.0	24.84
2.305	83.093	.4484	771.0	3.981	193.7	.1472-2	906.8	24.85
2.304	83.096	.4484	771.6	3.981	194.0	.1470-2	907.5	24.86
2.303	83.102	.4484	772.3	3.981	194.2	.1468-2	908.2	24.87
2.302	83.104	.4484	772.9	3.981	194.3	.1467-2	909.0	24.88
2.301	83.107	.4484	773.5	3.981	194.5	.1466-2	910.4	24.89
2.300	83.110	.4484	774.1	3.981	194.6	.1465-2		
2.299	83.113	.4484	774.6	3.981	194.7	.1464-2	911.2	24.90
2.298	83.115	.4484	775.4	3.981	194.8	.1463-2	911.9	24.91
2.297	83.118	.4484	776.0	3.981	194.9	.1462-2	912.6	24.92
2.296	83.121	.4484	776.6	3.981	195.1	.1461-2	913.3	24.93
2.295	83.126	.4484	777.3	3.981	195.4	.1459-2	914.1	24.94
2.294	83.129	.4484	777.9	3.981	195.5	.1457-2	914.8	24.95
2.293	83.132	.4484	778.5	3.981	195.6	.1456-2	915.5	24.96
2.292	83.135	.4484	779.1	3.981	195.7	.1454-2	916.3	24.97
2.291			779.4	3.981	195.9	.1452-2	917.0	24.98
2.290			780.4	3.981	196.0	.1450-2	917.7	24.99

TABLE I.- VALUES FOR RATIOS OF

M	p/p <sub>t</sub>	p/p <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/p <sub>t</sub>	A°/A	V/V <sub>0</sub>	V/V <sup>0</sup>
0.00	1.5777-5	.33098-1	.47777-2	.69118-1	.88155-3	.10114-2	.9976	.9955
0.01	1.5774-5	.32994-1	.47773-2	.69096-1	.88055-3	.10112-2	.9976	.9955
0.02	1.5668-5	.32890-1	.47669-2	.69031-1	.81865-3	.10019-2	.9976	.9955
0.03	1.5655-5	.32886-1	.47656-2	.69011-1	.81765-3	.10007-2	.9976	.9955
0.04	1.5655-5	.32882-1	.47544-2	.68995-1	.81587-3	.10006-2	.9976	.9955
0.05	1.5655-5	.32878-1	.47511-2	.68990-1	.81477-3	.10005-2	.9976	.9955
0.06	1.5655-5	.32874-1	.47477-2	.68897-1	.81377-3	.10003-2	.9976	.9955
0.07	1.5655-5	.32867-1	.47433-2	.68887-1	.81289-3	.10003-2	.9976	.9955
0.08	1.5544-5	.32863-1	.47359-2	.68844-1	.81185-3	.10002-2	.9976	.9955
0.09	1.5544-5	.32859-1	.47356-2	.68824-1	.80989-3	.10001-2	.9976	.9955
0.10	1.5544-5	.32855-1	.47352-2	.68819-1	.80884-3	.10001-2	.9976	.9955
0.11	1.5544-5	.32851-1	.47347-2	.68793-1	.80800-3	.10001-2	.9976	.9955
0.12	1.5544-5	.32847-1	.47342-2	.68781-1	.80800-3	.10001-2	.9976	.9955
0.13	1.5544-5	.32843-1	.47341-2	.68771-1	.80800-3	.10001-2	.9976	.9955
0.14	1.5544-5	.32839-1	.47339-2	.68717-2	.80800-3	.10001-2	.9976	.9955
0.15	1.5544-5	.32835-1	.47336-2	.68713-2	.80800-3	.10001-2	.9976	.9955
0.16	1.5544-5	.32831-1	.47309-2	.68660-1	.80804-3	.10001-2	.9976	.9955
0.17	1.5544-5	.32828-1	.47305-2	.68660-1	.80832-3	.10001-2	.9976	.9955
0.18	1.5544-5	.32824-1	.47092-2	.68587-1	.80808-3	.10001-2	.9976	.9955
0.19	1.5544-5	.32820-1	.46994-2	.68552-1	.80135-3	.98893-3	.9976	.9955
0.20	1.5544-5	.32816-1	.46994-2	.68549-1	.80093-3	.98881-3	.9977	.9955
0.21	1.5544-5	.32813-1	.46887-2	.68446-1	.79945-3	.98858-3	.9977	.9955
0.22	1.5544-5	.32809-1	.46883-2	.68444-1	.79975-3	.98846-3	.9977	.9955
0.23	1.5544-5	.32805-1	.46880-2	.68441-1	.79966-3	.98834-3	.9977	.9955
0.24	1.5544-5	.32801-1	.46876-2	.68358-1	.79956-3	.98823-3	.9977	.9955
0.25	1.5544-5	.32798-1	.46873-2	.68355-1	.79491-3	.98811-3	.9977	.9955
0.26	1.5544-5	.32794-1	.46869-2	.68353-1	.79306-3	.98800-3	.9977	.9955
0.27	1.4861-5	.31886-3	.46665-2	.68307-1	.79285-3	.97888-3	.9977	.9955
0.28	1.4861-5	.31882-3	.46661-2	.68287-1	.79190-3	.97777-3	.9977	.9955
0.29	1.4778-5	.31795-3	.46554-2	.68252-1	.78910-3	.97665-3	.9977	.9955
0.30	1.4778-5	.31791-3	.46550-2	.68219-1	.78900-3	.97544-3	.9977	.9955
0.31	1.4778-5	.31787-3	.46547-2	.68217-1	.78882-3	.97531-3	.9977	.9955
0.32	1.4778-5	.31783-3	.46543-2	.68214-1	.78863-3	.97518-3	.9977	.9955
0.33	1.4778-5	.31779-3	.46539-2	.68209-1	.78845-3	.97508-3	.9977	.9955
0.34	1.4778-5	.31775-3	.46535-2	.68206-1	.78835-3	.97500-3	.9977	.9955
0.35	1.4778-5	.31771-3	.46531-2	.68203-1	.78825-3	.97492-3	.9977	.9955
0.36	1.4778-5	.31767-3	.46527-2	.68200-1	.78815-3	.97484-3	.9977	.9955
0.37	1.4778-5	.31763-3	.46523-2	.68196-1	.78805-3	.97476-3	.9977	.9955
0.38	1.4778-5	.31759-3	.46519-2	.68193-1	.78796-3	.97468-3	.9977	.9955
0.39	1.4778-5	.31755-3	.46515-2	.68190-1	.78788-3	.97460-3	.9977	.9955
0.40	1.4778-5	.31751-3	.46511-2	.68187-1	.78780-3	.97452-3	.9977	.9955
0.41	1.4778-5	.31747-3	.46507-2	.68184-1	.78772-3	.97444-3	.9977	.9955
0.42	1.4778-5	.31743-3	.46503-2	.68181-1	.78764-3	.97436-3	.9977	.9955
0.43	1.4778-5	.31739-3	.46500-2	.68179-1	.78755-3	.97428-3	.9977	.9955
0.44	1.4778-5	.31735-3	.46496-2	.68176-1	.78747-3	.97420-3	.9977	.9955
0.45	1.4778-5	.31731-3	.46492-2	.68173-1	.78739-3	.97412-3	.9977	.9955
0.46	1.4778-5	.31727-3	.46488-2	.68170-1	.78731-3	.97404-3	.9977	.9955
0.47	1.4778-5	.31723-3	.46484-2	.68167-1	.78723-3	.97396-3	.9977	.9955
0.48	1.4778-5	.31719-3	.46480-2	.68164-1	.78715-3	.97388-3	.9977	.9955
0.49	1.4778-5	.31715-3	.46476-2	.68161-1	.78707-3	.97380-3	.9977	.9955
0.50	1.4778-5	.31711-3	.46472-2	.68158-1	.78699-3	.97372-3	.9977	.9955
0.51	1.4778-5	.31707-3	.46468-2	.68155-1	.78691-3	.97364-3	.9977	.9955
0.52	1.4778-5	.31703-3	.46464-2	.68152-1	.78683-3	.97356-3	.9977	.9955
0.53	1.4778-5	.31700-3	.46460-2	.68149-1	.78675-3	.97348-3	.9977	.9955
0.54	1.4778-5	.31696-3	.46456-2	.68146-1	.78667-3	.97340-3	.9977	.9955
0.55	1.4778-5	.31692-3	.46452-2	.68143-1	.78659-3	.97332-3	.9977	.9955
0.56	1.4778-5	.31688-3	.46448-2	.68140-1	.78651-3	.97324-3	.9977	.9955
0.57	1.4778-5	.31684-3	.46444-2	.68137-1	.78643-3	.97316-3	.9977	.9955
0.58	1.4778-5	.31680-3	.46440-2	.68134-1	.78635-3	.97308-3	.9977	.9955
0.59	1.4778-5	.31676-3	.46436-2	.68131-1	.78627-3	.97300-3	.9977	.9955
0.60	1.4778-5	.31672-3	.46432-2	.68128-1	.78619-3	.97292-3	.9977	.9955
0.61	1.4778-5	.31668-3	.46428-2	.68125-1	.78611-3	.97284-3	.9977	.9955
0.62	1.4778-5	.31664-3	.46424-2	.68122-1	.78603-3	.97276-3	.9977	.9955
0.63	1.4778-5	.31660-3	.46420-2	.68119-1	.78595-3	.97268-3	.9977	.9955
0.64	1.4778-5	.31656-3	.46416-2	.68116-1	.78587-3	.97260-3	.9977	.9955
0.65	1.4778-5	.31652-3	.46412-2	.68113-1	.78579-3	.97252-3	.9977	.9955
0.66	1.4778-5	.31648-3	.46408-2	.68110-1	.78571-3	.97244-3	.9977	.9955
0.67	1.4778-5	.31644-3	.46404-2	.68107-1	.78563-3	.97236-3	.9977	.9955
0.68	1.4778-5	.31640-3	.46399-2	.68104-1	.78555-3	.97228-3	.9977	.9955
0.69	1.4778-5	.31636-3	.46395-2	.68101-1	.78547-3	.97220-3	.9977	.9955
0.70	1.3775-5	.30400-3	.45829-2	.67244-1	.75657-3	.93410-3	.9977	.9954
0.71	1.3779-5	.30397-3	.45817-2	.67230-1	.75653-3	.93390-3	.9977	.9954
0.72	1.3775-5	.30394-3	.45814-2	.67219-1	.75649-3	.93370-3	.9977	.9954
0.73	1.3775-5	.30391-3	.45811-2	.67208-1	.75645-3	.93350-3	.9977	.9954
0.74	1.3775-5	.30388-3	.45808-2	.67205-1	.75641-3	.93330-3	.9977	.9954
0.75	1.3775-5	.30385-3	.45805-2	.67202-1	.75637-3	.93310-3	.9977	.9954
0.76	1.3775-5	.30382-3	.45802-2	.67200-1	.75633-3	.93290-3	.9977	.9954
0.77	1.3775-5	.30379-3	.45799-2	.67197-1	.75629-3	.93270-3	.9977	.9954
0.78	1.3775-5	.30376-3	.45796-2	.67194-1	.75625-3	.93250-3	.9977	.9954
0.79	1.3775-5	.30373-3	.45793-2	.67191-1	.75621-3	.93230-3	.9977	.9954
0.80	1.3746-5	.30370-3	.45790-2	.67188-1	.75617-3	.93210-3	.9977	.9954
0.81	1.3743-5	.30367-3	.45787-2	.67185-1	.75613-3	.93190-3	.9977	.9954
0.82	1.3743-5	.30364-3	.45784-2	.67182-1	.75609-3	.93170-3	.9977	.9954
0.83	1.3743-5	.30361-3	.45781-2	.67179-1	.75605-3	.93150-3	.9977	.9954
0.84	1.3743-5	.30358-3	.45778-2	.67176-1	.75601-3	.93130-3	.9977	.9954
0.85	1.3743-5	.30355-3	.45775-2	.67173-1	.75597-3	.93110-3	.9977	.9954
0.86	1.3743-5	.30352-3	.45772-2	.67170-1	.75593-3	.93090-3	.9977	.9954
0.87	1.3743-5	.30349-3	.45769-2	.67167-1	.75589-3	.93070-3	.9977	.9954
0.88	1.3743-5	.30346-3	.45766-2	.67164-1	.75585-3	.93050-3	.9977	.9954
0.89	1.3743-5	.30343-3	.45763-2	.67161-1	.75581-3	.93030-3	.9977	.9954
0.90	1.3743-5	.30340-3	.45760-2	.67158-1	.75577-3	.93010-3	.9977	.9954
0.91	1.3743-5	.30337-3	.45757-2	.67155-1	.75573-3	.92989-3	.9977	.9954
0.92	1.3743-5	.30334-3	.45754-2	.67152-1	.75569-3	.92969-3	.9977	.9954
0.93	1.3743-5	.30331-3	.45751-2	.67149-1	.75565-3	.92949-3	.9977	.9954
0.94	1.3743-5	.30328-3	.45748-2	.67146-1	.75561-3	.92929-3	.9977	.9954
0.95	1.3743-5	.30325-3	.45745-2	.67143-1	.75557-3	.92909-3	.9977	.9954
0.96	1.3743-5	.30322-3	.45742-2	.67140-1	.75553-3	.92889-3	.9977	.9954
0.97	1.3743-5	.30319-3	.45739-2	.67137-1	.75549-3	.92869-3	.9977	.9954
0.98	1.3743-5	.30316-3	.45736-2	.67134-1	.75545-3	.92849-3	.9977	.9954
0.99	1.3743-5	.30313-3	.45733-2	.67131-1	.75541-3	.92829-3	.9977	.9954

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\nu$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
2.2292	83.157	.4484	781.0	3.981	196.2	.1449-2	918.5	25.00
2.2292	83.140	.4484	781.6	3.981	196.3	.1447-2	919.2	25.01
2.2291	83.143	.4484	782.3	3.981	196.5	.1445-2	920.0	25.02
2.2290	83.145	.4484	782.9	3.981	196.7	.1444-2	920.7	25.03
2.2289	83.148	.4484	783.5	3.981	197.0	.1442-2	921.4	25.04
2.2288	83.151	.4484	784.1	3.981	197.3	.1440-2	922.1	25.05
2.2287	83.154	.4484	784.6	3.981	197.6	.1438-2	922.8	25.06
2.2286	83.156	.4484	785.4	3.981	197.9	.1437-2	923.5	25.07
2.2285	83.159	.4484	786.0	3.981	197.4	.1435-2	924.4	25.08
2.2284	83.162	.4483	786.6	3.981	197.6	.1433-2	925.1	25.09
2.2283	83.165	.4483	787.3	3.981	197.8	.1432-2	925.8	25.10
2.2282	83.167	.4483	787.9	3.981	197.9	.1430-2	926.5	25.11
2.2281	83.170	.4483	788.5	3.981	198.1	.1428-2	927.2	25.12
2.2280	83.173	.4483	789.1	3.981	198.3	.1426-2	927.9	25.13
2.2279	83.175	.4483	789.8	3.981	198.4	.1425-2	928.5	25.14
2.2278	83.178	.4483	790.4	3.981	198.5	.1423-2	929.5	25.15
2.2277	83.181	.4483	791.0	3.981	198.7	.1421-2	930.5	25.16
2.2276	83.183	.4483	791.7	3.981	198.9	.1420-2	931.0	25.17
2.2275	83.186	.4483	792.3	3.981	199.0	.1418-2	931.7	25.18
2.2275	83.189	.4483	792.9	3.981	199.2	.1416-2	932.5	25.19
2.2274	83.192	.4483	793.6	3.981	199.3	.1415-2	933.2	25.20
2.2273	83.194	.4483	794.2	3.981	199.5	.1413-2	934.0	25.21
2.2272	83.197	.4483	794.8	3.981	199.6	.1411-2	934.7	25.22
2.2271	83.200	.4483	795.4	3.981	199.8	.1410-2	935.5	25.23
2.2270	83.202	.4483	796.1	3.981	200.0	.1408-2	936.2	25.24
2.2269	83.205	.4483	796.7	3.981	200.1	.1406-2	936.9	25.25
2.2268	83.210	.4483	797.3	3.981	200.3	.1405-2	937.7	25.26
2.2267	83.213	.4483	798.0	3.981	200.4	.1403-2	938.4	25.27
2.2266	83.216	.4483	798.6	3.981	200.6	.1401-2	939.2	25.28
2.2265	83.218	.4483	799.2	3.981	200.7	.1400-2	939.9	25.29
2.2264	83.221	.4483	800.5	3.981	200.1	.1398-2	940.6	25.30
2.2263	83.224	.4483	801.1	3.981	200.4	.1396-2	941.4	25.31
2.2263	83.226	.4483	801.8	3.981	200.4	.1395-2	942.1	25.32
2.2262	83.229	.4483	802.4	3.981	200.5	.1398-2	942.9	25.33
2.2261	83.232	.4483	803.0	3.981	200.7	.1390-2	944.4	25.35
2.2260	83.234	.4483	803.7	3.981	200.9	.1388-2	945.1	25.36
2.2259	83.237	.4483	804.3	3.981	200.9	.1387-2	945.9	25.37
2.2258	83.240	.4483	804.9	3.981	200.9	.1385-2	946.6	25.38
2.2257	83.242	.4483	805.6	3.981	200.9	.1383-2	947.3	25.39
2.2256	83.245	.4483	806.2	3.981	200.5	.1382-2	948.1	25.40
2.2255	83.246	.4483	806.8	3.982	200.6	.1380-2	948.8	25.41
2.2255	83.250	.4483	807.5	3.982	200.6	.1379-2	949.6	25.42
2.2254	83.253	.4483	808.1	3.982	200.5	.1377-2	950.3	25.43
2.2253	83.256	.4483	808.7	3.982	200.5	.1375-2	951.1	25.44
2.2252	83.259	.4483	809.4	3.982	200.4	.1374-2	951.8	25.45
2.2251	83.261	.4483	810.0	3.982	200.3	.1373-2	952.6	25.46
2.2250	83.263	.4483	811.3	3.982	200.3	.1369-2	953.3	25.47
2.2249	83.266	.4483	811.9	3.982	200.3	.1367-2	954.0	25.48
2.2248	83.269	.4483	812.5	3.982	200.4	.1366-2	955.6	25.49
2.2247	83.271	.4483	812.6	3.982	200.4	.1364-2	956.3	25.50
2.2246	83.274	.4483	813.2	3.982	200.4	.1362-2	957.1	25.51
2.2245	83.276	.4483	814.1	3.982	200.4	.1361-2	957.8	25.52
2.2244	83.278	.4483	815.1	3.982	200.4	.1359-2	958.6	25.53
2.2243	83.285	.4483	815.8	3.982	200.4	.1358-2	959.3	25.54
2.2242	83.287	.4483	816.4	3.982	200.5	.1356-2	960.1	25.55
2.2241	83.290	.4483	817.0	3.982	200.5	.1355-2	960.8	25.56
2.2240	83.292	.4483	817.6	3.982	200.5	.1354-2	961.5	25.57
2.2239	83.295	.4483	818.3	3.982	200.5	.1353-2	962.3	25.58
2.2238	83.298	.4483	819.0	3.982	200.5	.1350-2	963.1	25.60
2.2237	83.303	.4483	820.2	3.982	200.5	.1348-2	964.6	25.62
2.2235	83.305	.4483	820.9	3.982	200.5	.1347-2	965.3	25.63
2.2235	83.306	.4483	821.5	3.982	200.5	.1345-2	966.1	25.64
2.2234	83.311	.4483	822.2	3.982	200.5	.1344-2	966.8	25.65
2.2233	83.313	.4483	822.8	3.982	200.5	.1342-2	967.5	25.66
2.2231	83.316	.4483	823.4	3.982	200.5	.1340-2	968.2	25.67
2.2231	83.318	.4483	824.1	3.982	200.5	.1339-2	969.0	25.68
2.2230	83.321	.4483	824.7	3.982	200.7	.1336-2	969.9	25.69
2.2229	83.324	.4483	825.4	3.982	200.7	.1334-2	970.6	25.70
2.2228	83.327	.4483	826.0	3.982	200.7	.1332-2	971.4	25.71
2.2227	83.331	.4483	827.3	3.982	200.7	.1330-2	972.1	25.72
2.2227	83.334	.4483	827.9	3.982	200.7	.1328-2	972.9	25.73
2.2226	83.334	.4483	828.6	3.982	200.7	.1327-2	973.6	25.74
2.2225	83.342	.4483	829.0	3.982	200.8	.1325-2	974.3	25.75
2.2224	83.344	.4483	830.5	3.982	200.8	.1324-2	975.1	25.76
2.2223	83.347	.4483	831.0	3.982	200.8	.1322-2	975.9	25.77
2.2222	83.349	.4483	831.8	3.982	200.8	.1321-2	976.7	25.78
2.2221	83.352	.4483	832.4	3.982	200.8	.1320-2	977.4	25.79
2.2220	83.354	.4483	833.1	3.982	200.8	.1319-2	978.1	25.80
2.2219	83.357	.4483	833.7	3.982	200.8	.1318-2	978.9	25.81
2.2218	83.360	.4483	834.4	3.982	200.9	.1317-2	979.7	25.82
2.2217	83.362	.4483	835.0	3.982	200.9	.1316-2	980.5	25.83
2.2216	83.365	.4483	835.7	3.982	200.9	.1315-2	981.3	25.84
2.2215	83.367	.4483	836.3	3.982	201.0	.1314-2	982.0	25.85
2.2214	83.370	.4483	837.0	3.982	201.0	.1313-2	982.7	25.86
2.2214	83.373	.4483	837.6	3.982	201.0	.1312-2	983.5	25.87
2.2213	83.375	.4483	838.3	3.982	210.5	.1304-2	984.2	25.90
2.2212	83.377	.4483	838.9	3.982	210.5	.1302-2	984.9	25.91
2.2211	83.380	.4483	840.2	3.982	211.0	.1301-2	985.6	25.92
2.2210	83.383	.4483	840.9	3.982	211.0	.1299-2	986.3	25.93
2.2209	83.385	.4483	841.5	3.982	211.1	.1298-2	986.8	25.94
2.2208	83.388	.4483	842.2	3.982	211.1	.1297-2	987.6	25.95
2.2207	83.390	.4483	842.8	3.982	211.1	.1296-2	988.3	25.96
2.2206	83.393	.4483	844.1	3.982	211.2	.1295-2	989.0	25.97
2.2205	83.395	.4483	844.7	3.982	211.2	.1294-2	989.7	25.98

TABLE I.- VALUES FOR RATIOS OF

M	$p/p_t$	$\rho/\rho_t$	$T/T_t$	$a/a_t$	$q/p_t$	$\Delta^*/\Delta$	$V/V_0$	$V/a^*$
26.00	.12985 - 5	.29237 - 3	.44118 - 2	.66447 - 1	.7310 - 3	.9023 - 3	.99778	1.9955585
26.01	.12985 - 5	.29235 - 3	.44115 - 2	.66444 - 1	.7301 - 3	.9015 - 3	.99778	1.9955585
26.03	.12985 - 5	.29233 - 3	.44112 - 2	.66442 - 1	.7293 - 3	.9002 - 3	.99778	1.9955599
26.04	.12985 - 5	.29231 - 3	.44088 - 2	.66391 - 1	.7285 - 3	.8998 - 3	.99778	1.9955599
26.05	.12985 - 5	.29230 - 3	.44085 - 2	.66337 - 1	.7276 - 3	.8978 - 3	.99778	1.9955600
26.06	.12985 - 5	.29113 - 3	.43901 - 2	.66334 - 1	.7268 - 3	.8978 - 3	.99778	1.9955600
26.07	.12987 - 5	.29110 - 3	.43955 - 2	.66388 - 1	.7251 - 3	.8951 - 3	.99778	1.9955601
26.08	.12987 - 5	.29010 - 3	.43880 - 2	.66287 - 1	.7243 - 3	.8941 - 3	.99778	1.9955601
26.09	.12987 - 5	.29007 - 3	.43884 - 1	.66284 - 1	.7232 - 3	.8931 - 3	.99778	1.9955601
26.10	.12773 - 5	.28903 - 3	.43851 - 2	.66282 - 1	.7227 - 3	.8920 - 3	.99778	1.9955611
26.11	.12771 - 5	.28900 - 3	.43858 - 2	.66219 - 1	.7218 - 3	.8910 - 3	.99778	1.9955611
26.13	.12668 - 5	.28897 - 3	.43778 - 2	.66117 - 1	.7210 - 3	.8900 - 3	.99778	1.9955611
26.14	.12666 - 5	.28895 - 3	.43775 - 2	.66114 - 1	.7208 - 3	.8890 - 3	.99778	1.9955611
26.15	.12665 - 5	.28897 - 3	.43771 - 2	.66112 - 1	.7194 - 3	.8880 - 3	.99778	1.9955611
26.16	.12665 - 5	.28897 - 3	.43668 - 2	.66099 - 1	.7185 - 3	.8870 - 3	.99778	1.9955611
26.17	.12665 - 5	.28897 - 3	.43665 - 2	.66097 - 1	.7174 - 3	.8860 - 3	.99778	1.9955611
26.18	.12665 - 5	.28897 - 3	.43662 - 2	.66095 - 1	.7163 - 3	.8850 - 3	.99778	1.9955611
26.19	.12665 - 5	.28897 - 3	.43660 - 2	.66093 - 1	.7161 - 3	.8840 - 3	.99778	1.9955611
26.20	.12665 - 5	.28897 - 3	.43658 - 2	.66091 - 1	.7159 - 3	.8830 - 3	.99778	1.9955611
26.21	.12447 - 5	.28870 - 3	.43545 - 2	.65956 - 1	.7145 - 3	.8819 - 3	.99778	1.9955611
26.22	.12444 - 5	.28864 - 3	.43544 - 2	.65944 - 1	.7137 - 3	.8809 - 3	.99778	1.9955611
26.23	.12442 - 5	.28851 - 3	.43545 - 2	.65951 - 1	.7128 - 3	.8799 - 3	.99778	1.9955611
26.24	.12440 - 5	.28851 - 3	.43545 - 2	.65950 - 1	.7126 - 3	.8798 - 3	.99778	1.9955611
26.25	.12437 - 5	.28851 - 3	.43545 - 2	.65950 - 1	.7104 - 3	.8779 - 3	.99778	1.9955611
26.26	.12437 - 5	.28851 - 3	.43545 - 2	.65950 - 1	.7096 - 3	.8759 - 3	.99778	1.9955611
26.27	.12437 - 5	.28851 - 3	.43545 - 2	.65950 - 1	.7086 - 3	.8749 - 3	.99778	1.9955611
26.28	.12437 - 5	.28851 - 3	.43545 - 2	.65950 - 1	.7072 - 3	.8729 - 3	.99778	1.9955611
26.29	.12437 - 5	.28841 - 3	.43545 - 2	.65947 - 1	.7064 - 3	.8710 - 3	.99778	1.9955611
26.30	.12266 - 5	.28839 - 3	.43510 - 2	.65772 - 1	.7064 - 3	.8700 - 3	.99778	1.9955611
26.31	.12264 - 5	.28835 - 3	.43510 - 2	.65771 - 1	.7058 - 3	.8690 - 3	.99778	1.9955611
26.32	.12264 - 5	.28835 - 3	.43510 - 2	.65770 - 1	.7040 - 3	.8680 - 3	.99778	1.9955611
26.33	.12264 - 5	.28835 - 3	.43510 - 2	.65770 - 1	.7032 - 3	.8670 - 3	.99778	1.9955611
26.34	.12264 - 5	.28835 - 3	.43510 - 2	.65770 - 1	.7016 - 3	.8660 - 3	.99778	1.9955611
26.35	.12264 - 5	.28835 - 3	.43510 - 2	.65770 - 1	.7008 - 3	.8652 - 3	.99778	1.9955611
26.36	.12264 - 5	.28835 - 3	.43510 - 2	.65770 - 1	.7000 - 3	.8641 - 3	.99778	1.9955611
26.37	.12264 - 5	.28835 - 3	.43510 - 2	.65770 - 1	.6993 - 3	.8631 - 3	.99778	1.9955611
26.38	.12264 - 5	.28835 - 3	.43510 - 2	.65770 - 1	.6991 - 3	.8634 - 3	.99778	1.9955611
26.39	.12264 - 5	.28835 - 3	.43510 - 2	.65770 - 1	.6989 - 3	.8634 - 3	.99778	1.9955611
26.40	.12003 - 5	.28806 - 3	.42865 - 2	.65447 - 1	.6985 - 3	.8621 - 3	.99779	1.9955711
26.41	.12000 - 5	.28800 - 3	.42860 - 2	.65444 - 1	.6977 - 3	.8612 - 3	.99779	1.9955711
26.42	.12000 - 5	.28797 - 3	.42867 - 2	.65442 - 1	.6969 - 3	.8602 - 3	.99779	1.9955711
26.43	.12000 - 5	.28797 - 3	.42867 - 2	.65439 - 1	.6961 - 3	.8593 - 3	.99779	1.9955711
26.44	.12000 - 5	.28797 - 3	.42867 - 2	.65437 - 1	.6953 - 3	.8583 - 3	.99779	1.9955711
26.45	.12000 - 5	.28797 - 3	.42867 - 2	.65435 - 1	.6945 - 3	.8573 - 3	.99779	1.9955711
26.46	.12000 - 5	.28797 - 3	.42867 - 2	.65434 - 1	.6938 - 3	.8563 - 3	.99779	1.9955711
26.47	.12000 - 5	.28797 - 3	.42867 - 2	.65432 - 1	.6930 - 3	.8554 - 3	.99779	1.9955711
26.48	.12000 - 5	.28797 - 3	.42867 - 2	.65430 - 1	.6922 - 3	.8546 - 3	.99779	1.9955711
26.49	.12000 - 5	.28797 - 3	.42867 - 2	.65428 - 1	.6914 - 3	.8537 - 3	.99779	1.9955711
26.50	.12778 - 5	.27774 - 3	.42554 - 2	.65223 - 1	.6906 - 3	.8525 - 3	.99779	1.9955744
26.51	.12776 - 5	.27771 - 3	.42554 - 2	.65221 - 1	.6899 - 3	.8515 - 3	.99779	1.9955744
26.52	.12776 - 5	.27768 - 3	.42554 - 2	.65220 - 1	.6891 - 3	.8505 - 3	.99779	1.9955744
26.53	.12776 - 5	.27765 - 3	.42554 - 2	.65218 - 1	.6883 - 3	.8496 - 3	.99779	1.9955744
26.54	.12776 - 5	.27762 - 3	.42554 - 2	.65216 - 1	.6875 - 3	.8487 - 3	.99779	1.9955744
26.55	.12776 - 5	.27759 - 3	.42554 - 2	.65214 - 1	.6868 - 3	.8477 - 3	.99779	1.9955744
26.56	.12776 - 5	.27756 - 3	.42554 - 2	.65212 - 1	.6860 - 3	.8468 - 3	.99779	1.9955744
26.57	.12776 - 5	.27753 - 3	.42554 - 2	.65210 - 1	.6852 - 3	.8459 - 3	.99779	1.9955744
26.58	.12776 - 5	.27750 - 3	.42554 - 2	.65208 - 1	.6845 - 3	.8448 - 3	.99779	1.9955744
26.59	.12776 - 5	.27746 - 3	.42554 - 2	.65206 - 1	.6837 - 3	.8439 - 3	.99779	1.9955744
26.60	.12150 - 5	.27474 - 3	.42554 - 2	.65204 - 1	.6829 - 3	.8429 - 3	.99779	1.9955744
26.61	.12150 - 5	.27471 - 3	.42554 - 2	.65202 - 1	.6822 - 3	.8422 - 3	.99779	1.9955744
26.62	.12150 - 5	.27468 - 3	.42554 - 2	.65200 - 1	.6815 - 3	.8415 - 3	.99779	1.9955744
26.63	.12150 - 5	.27465 - 3	.42554 - 2	.65198 - 1	.6808 - 3	.8408 - 3	.99779	1.9955744
26.64	.12150 - 5	.27462 - 3	.42554 - 2	.65196 - 1	.6801 - 3	.8401 - 3	.99779	1.9955744
26.65	.12150 - 5	.27459 - 3	.42554 - 2	.65194 - 1	.6794 - 3	.8394 - 3	.99779	1.9955744
26.66	.12150 - 5	.27456 - 3	.42554 - 2	.65192 - 1	.6787 - 3	.8387 - 3	.99779	1.9955744
26.67	.12150 - 5	.27453 - 3	.42554 - 2	.65190 - 1	.6780 - 3	.8380 - 3	.99779	1.9955744
26.68	.12150 - 5	.27450 - 3	.42554 - 2	.65188 - 1	.6773 - 3	.8373 - 3	.99779	1.9955744
26.69	.12150 - 5	.27447 - 3	.42554 - 2	.65186 - 1	.6766 - 3	.8366 - 3	.99779	1.9955744
26.70	.12150 - 5	.27444 - 3	.42554 - 2	.65184 - 1	.6759 - 3	.8359 - 3	.99779	1.9955744
26.71	.12150 - 5	.27441 - 3	.42554 - 2	.65182 - 1	.6752 - 3	.8352 - 3	.99779	1.9955744
26.72	.12150 - 5	.27438 - 3	.42554 - 2	.65180 - 1	.6745 - 3	.8345 - 3	.99779	1.9955744
26.73	.12150 - 5	.27435 - 3	.42554 - 2	.65178 - 1	.6738 - 3	.8338 - 3	.99779	1.9955744
26.74	.12150 - 5	.27432 - 3	.42554 - 2	.65176 - 1	.6731 - 3	.8330 - 3	.99779	1.9955744
26.75	.12150 - 5	.27429 - 3	.42554 - 2	.65174 - 1	.6724 - 3	.8323 - 3	.99779	1.9955744
26.76	.12150 - 5	.27426 - 3	.42554 - 2	.65172 - 1	.6717 - 3	.8316 - 3	.99779	1.9955744
26.77	.12150 - 5	.27423 - 3	.42554 - 2	.65170 - 1	.6710 - 3	.8309 - 3	.99779	1.9955744
26.78	.12150 - 5	.27420 - 3	.42554 - 2	.65168 - 1	.6703 - 3	.8302 - 3	.99779	1.9955744
26.79	.12150 - 5	.27417 - 3	.42554 - 2	.65166 - 1	.6696 - 3	.8295 - 3	.99779	1.9955744
26.80	.12150 - 5	.27414 - 3	.42554 - 2	.65164 - 1	.6689 - 3	.8288 - 3	.99779	1.9955744
26.81	.12150 - 5	.27411 - 3	.42554 - 2	.65162 - 1	.6682 - 3	.8281 - 3	.99779	1.9955744
26.82	.12150 - 5	.27408 - 3	.42554 - 2	.65160 - 1	.6675 - 3	.8274 - 3	.99779	1.9955744
26.83	.12150 - 5	.27405 - 3	.42554 - 2	.65158 - 1	.6668 - 3	.8267 - 3	.99779	1.9955744
26.84	.12150 - 5	.27402 - 3	.42554 - 2	.65156 - 1	.6661 - 3	.8260 - 3	.99779	1.9955744
26.85	.12150 - 5	.27399 - 3	.42554 - 2	.65154 - 1	.6654 - 3	.8253 - 3	.99779	1.9955744
26.86	.12150 - 5	.27396 - 3	.42554 - 2	.65152 - 1	.6647 - 3	.8246 - 3	.99779	1.9955744
26.87	.12150 - 5	.27393 - 3	.42554 - 2	.65150 - 1	.6640 - 3	.8239 - 3	.99779	1.9955744
26.88	.12150 - 5	.27390 - 3	.42554 - 2	.65148 - 1	.6633 - 3	.8232 - 3	.99779	1.9955744
26.89	.12150 - 5	.27387 - 3	.42554 - 2	.65146 - 1	.6626 - 3	.8225 - 3	.99779	1.9955744
26.90	.12150 - 5	.27384 - 3	.42554 - 2	.65144 - 1	.6619 - 3	.8218 - 3	.99779	1.9955744
26.91	.12150 - 5	.27381 - 3	.42554 - 2	.65142 - 1	.6612 - 3	.8211 - 3	.99779	1.9955744
26.92	.12150 - 5	.27378 - 3	.42554 - 2	.65140 - 1	.6605 - 3	.8204 - 3	.99779	1.9955744
26.93	.12150 - 5	.27375 - 3	.42554 - 2	.65138 - 1	.6598 - 3	.8207 - 3	.99779	1.9955744
26.94	.12150 - 5	.27372 - 3	.42554 - 2	.65136 - 1	.6591 - 3	.8200 - 3	.99779	1.9955744
26.95	.12150 - 5	.27369 - 3	.42554 - 2	.65134 - 1	.6584 - 3	.8193 - 3	.99779	1.9955744
26.96	.12150 - 5	.27366 - 3	.42554 - 2	.65132 - 1	.6577 - 3	.8186 - 3	.99779	1.9955744
26.97	.12150 - 5	.27363 - 3	.42554 - 2	.65130 - 1	.6570 - 3	.8179 - 3	.99779	1.9955744
26.98	.12150 - 5	.27360 - 3	.42554 - 2	.65128 - 1	.6563 - 3	.8172 - 3	.99779	1.9955744
26.99	.12150 - 5	.27357 - 3	.42554 - 2	.65126 - 1	.6556 - 3	.8165 - 3	.99779	1.9955744
27.00	.12150 - 5	.27354 - 3	.42554 - 2	.65124 - 1	.6549 - 3	.8158 - 3	.99779	1.9955744
27.01	.12150 - 5	.27351 - 3	.42554 - 2	.65122 - 1	.6542 - 3	.8151 - 3	.99779	1.9955744
27.02	.12150 - 5	.27348 - 3	.42554 - 2	.65120 - 1	.6535 - 3	.8144 - 3	.99779	1.9955744
27.03	.12150 - 5	.27345 - 3	.42554 - 2	.65118 - 1	.6528 - 3	.8137 - 3	.99779	1.9955744
27.04	.12150 - 5	.27342 - 3	.42554 - 2	.65116 - 1	.6521 - 3	.8130 - 3	.99779	1.9955744
27.05	.12150 - 5	.27339 - 3	.42554 - 2	.65114 - 1	.6514 - 3	.8123 - 3	.99779	1.9955744
27.06	.12150 - 5	.27336 - 3	.42554 - 2	.65112 - 1	.6507 - 3	.8116 - 3	.99779	

## FUNDAMENTAL FLOW EQUATIONS

TABLE I.- VALUES FOR RATIOS OF

M	$p/p_t$	$\rho/\rho_t$	$T/T_t$	$a/a_t$	$q/q_t$	$A^*/A$	$V/V_0$	$V/v^*$
27.00	.10755-5	.26244-3	.40988-2	.64022-1	.65323-3	.80623-3	.9979	1.999590
27.01	.10733-5	.26211-3	.40955-2	.63999-1	.65285-3	.80533-3	.9980	1.999590
27.02	.10714-5	.26181-3	.40923-2	.63977-1	.65158-3	.80455-3	.9980	1.999590
27.03	.10695-5	.26150-3	.40892-2	.63955-1	.65031-3	.80366-3	.9980	1.999590
27.04	.10676-5	.26119-3	.40861-2	.63933-1	.64904-3	.80287-3	.9980	1.999590
27.05	.10657-5	.26089-3	.40830-2	.63911-1	.64777-3	.80208-3	.9980	1.999590
27.06	.10638-5	.26058-3	.40799-2	.63888-1	.64650-3	.80129-3	.9980	1.999590
27.07	.10619-5	.26027-3	.40767-2	.63865-1	.64523-3	.80050-3	.9980	1.999590
27.08	.10600-5	.26000-3	.40735-2	.63843-1	.64396-3	.79971-3	.9980	1.999590
27.09	.10581-5	.25969-3	.40703-2	.63821-1	.64269-3	.79892-3	.9980	1.999590
27.10	.10562-5	.25938-3	.40671-2	.63798-1	.64142-3	.79813-3	.9980	1.999590
27.11	.10543-5	.25907-3	.40639-2	.63776-1	.64015-3	.79734-3	.9980	1.999590
27.12	.10524-5	.25876-3	.40607-2	.63754-1	.63888-3	.79655-3	.9980	1.999590
27.13	.10505-5	.25845-3	.40575-2	.63732-1	.63761-3	.79576-3	.9980	1.999590
27.14	.10486-5	.25814-3	.40543-2	.63710-1	.63634-3	.79497-3	.9980	1.999590
27.15	.10467-5	.25783-3	.40511-2	.63688-1	.63507-3	.79418-3	.9980	1.999590
27.16	.10448-5	.25752-3	.40479-2	.63666-1	.63380-3	.79339-3	.9980	1.999590
27.17	.10429-5	.25721-3	.40447-2	.63644-1	.63253-3	.79260-3	.9980	1.999590
27.18	.10410-5	.25690-3	.40415-2	.63622-1	.63126-3	.79181-3	.9980	1.999590
27.19	.10381-5	.25659-3	.40383-2	.63599-1	.63000-3	.79092-3	.9980	1.999590
27.20	.10362-5	.25628-3	.40351-2	.63577-1	.62873-3	.78913-3	.9980	1.999590
27.21	.10343-5	.25597-3	.40319-2	.63555-1	.62746-3	.78834-3	.9980	1.999590
27.22	.10324-5	.25566-3	.40287-2	.63533-1	.62619-3	.78755-3	.9980	1.999590
27.23	.10305-5	.25535-3	.40255-2	.63511-1	.62492-3	.78676-3	.9980	1.999590
27.24	.10286-5	.25504-3	.40223-2	.63489-1	.62365-3	.78597-3	.9980	1.999590
27.25	.10267-5	.25473-3	.40191-2	.63467-1	.62238-3	.78518-3	.9980	1.999590
27.26	.10248-5	.25442-3	.40159-2	.63445-1	.62111-3	.78439-3	.9980	1.999590
27.27	.10229-5	.25411-3	.40127-2	.63423-1	.61984-3	.78360-3	.9980	1.999590
27.28	.10210-5	.25380-3	.40095-2	.63401-1	.61857-3	.78281-3	.9980	1.999590
27.29	.10191-5	.25349-3	.40063-2	.63379-1	.61730-3	.78202-3	.9980	1.999590
27.30	.10172-5	.25318-3	.40031-2	.63357-1	.61603-3	.78123-3	.9980	1.999590
27.31	.10153-5	.25287-3	.40000-2	.63335-1	.61476-3	.78044-3	.9980	1.999590
27.32	.10134-5	.25256-3	.39968-2	.63313-1	.61349-3	.77965-3	.9980	1.999590
27.33	.10115-5	.25225-3	.39936-2	.63291-1	.61222-3	.77886-3	.9980	1.999590
27.34	.10096-5	.25194-3	.39894-2	.63269-1	.61095-3	.77807-3	.9980	1.999590
27.35	.10077-5	.25163-3	.39862-2	.63247-1	.60968-3	.77728-3	.9980	1.999590
27.36	.10058-5	.25132-3	.39830-2	.63225-1	.60841-3	.77649-3	.9980	1.999590
27.37	.10039-5	.25101-3	.39798-2	.63203-1	.60714-3	.77570-3	.9980	1.999590
27.38	.10020-5	.25070-3	.39766-2	.63181-1	.60587-3	.77491-3	.9980	1.999590
27.39	.10001-5	.25039-3	.39734-2	.63159-1	.60460-3	.77412-3	.9980	1.999590
27.40	.9994-6	.25007-3	.39702-2	.63137-1	.60333-3	.77333-3	.9980	1.999590
27.41	.9995-6	.24976-3	.39670-2	.63115-1	.60206-3	.77254-3	.9980	1.999590
27.42	.9996-6	.24944-3	.39638-2	.63093-1	.60079-3	.77175-3	.9980	1.999590
27.43	.9997-6	.24913-3	.39606-2	.63071-1	.60052-3	.77096-3	.9980	1.999590
27.44	.9998-6	.24881-3	.39574-2	.63049-1	.59925-3	.77017-3	.9980	1.999590
27.45	.9999-6	.24849-3	.39542-2	.63027-1	.59898-3	.76938-3	.9980	1.999590
27.46	.99857-6	.24817-3	.39510-2	.62995-1	.59871-3	.76859-3	.9980	1.999590
27.47	.99858-6	.24785-3	.39478-2	.62973-1	.59844-3	.76780-3	.9980	1.999590
27.48	.99859-6	.24753-3	.39446-2	.62951-1	.59817-3	.76701-3	.9980	1.999590
27.49	.99860-6	.24721-3	.39414-2	.62929-1	.59790-3	.76622-3	.9980	1.999590
27.50	.99861-6	.24689-3	.39382-2	.62907-1	.59763-3	.76543-3	.9980	1.999590
27.51	.99862-6	.24657-3	.39350-2	.62885-1	.59736-3	.76464-3	.9980	1.999590
27.52	.99863-6	.24625-3	.39318-2	.62863-1	.59709-3	.76385-3	.9980	1.999590
27.53	.99864-6	.24593-3	.39286-2	.62841-1	.59682-3	.76306-3	.9980	1.999590
27.54	.99865-6	.24561-3	.39254-2	.62819-1	.59655-3	.76227-3	.9980	1.999590
27.55	.99866-6	.24529-3	.39222-2	.62797-1	.59628-3	.76148-3	.9980	1.999590
27.56	.99867-6	.24497-3	.39190-2	.62775-1	.59601-3	.76069-3	.9980	1.999590
27.57	.99868-6	.24465-3	.39158-2	.62753-1	.59574-3	.75990-3	.9980	1.999590
27.58	.99869-6	.24433-3	.39126-2	.62731-1	.59547-3	.75911-3	.9980	1.999590
27.59	.99870-6	.24401-3	.39094-2	.62709-1	.59520-3	.75832-3	.9980	1.999590
27.60	.99871-6	.24369-3	.39062-2	.62687-1	.59493-3	.75753-3	.9980	1.999590
27.61	.99872-6	.24337-3	.39030-2	.62665-1	.59466-3	.75674-3	.9980	1.999590
27.62	.99873-6	.24305-3	.39098-2	.62643-1	.59439-3	.75595-3	.9980	1.999590
27.63	.99874-6	.24273-3	.39066-2	.62621-1	.59412-3	.75516-3	.9980	1.999590
27.64	.99875-6	.24241-3	.39034-2	.62599-1	.59385-3	.75437-3	.9980	1.999590
27.65	.99876-6	.24209-3	.39002-2	.62577-1	.59358-3	.75358-3	.9980	1.999590
27.66	.99877-6	.24177-3	.38970-2	.62555-1	.59331-3	.75279-3	.9980	1.999590
27.67	.99878-6	.24145-3	.38938-2	.62533-1	.59304-3	.75200-3	.9980	1.999590
27.68	.99879-6	.24113-3	.38906-2	.62511-1	.59277-3	.75121-3	.9980	1.999590
27.69	.99880-6	.24081-3	.38874-2	.62489-1	.59250-3	.75042-3	.9980	1.999590
27.70	.99881-6	.24049-3	.38842-2	.62467-1	.59223-3	.74963-3	.9980	1.999590
27.71	.99882-6	.24017-3	.38810-2	.62445-1	.59196-3	.74884-3	.9980	1.999590
27.72	.99883-6	.23985-3	.38778-2	.62423-1	.59169-3	.74805-3	.9980	1.999590
27.73	.99884-6	.23953-3	.38746-2	.62401-1	.59142-3	.74726-3	.9980	1.999590
27.74	.99885-6	.23921-3	.38714-2	.62379-1	.59115-3	.74647-3	.9980	1.999590
27.75	.99886-6	.23889-3	.38682-2	.62357-1	.59088-3	.74568-3	.9980	1.999590
27.76	.99887-6	.23857-3	.38650-2	.62335-1	.59061-3	.74489-3	.9980	1.999590
27.77	.99888-6	.23825-3	.38618-2	.62313-1	.59034-3	.74410-3	.9980	1.999590
27.78	.99889-6	.23793-3	.38586-2	.62291-1	.59007-3	.74331-3	.9980	1.999590
27.79	.99890-6	.23761-3	.38554-2	.62269-1	.58980-3	.74252-3	.9980	1.999590
27.80	.99891-6	.23729-3	.38522-2	.62247-1	.58953-3	.74173-3	.9980	1.999590
27.81	.99892-6	.23697-3	.38490-2	.62225-1	.58926-3	.74094-3	.9980	1.999590
27.82	.99893-6	.23665-3	.38458-2	.62203-1	.58899-3	.74015-3	.9980	1.999590
27.83	.99894-6	.23633-3	.38426-2	.62181-1	.58872-3	.73936-3	.9980	1.999590
27.84	.99895-6	.23591-3	.38394-2	.62159-1	.58845-3	.73857-3	.9980	1.999590
27.85	.99896-6	.23559-3	.38362-2	.62137-1	.58818-3	.73778-3	.9980	1.999590
27.86	.99897-6	.23527-3	.38330-2	.62115-1	.58791-3	.73700-3	.9980	1.999590
27.87	.99898-6	.23495-3	.38298-2	.62093-1	.58764-3	.73621-3	.9980	1.999590
27.88	.99899-6	.23463-3	.38266-2	.62071-1	.58737-3	.73542-3	.9980	1.999590
27.89	.99900-6	.23431-3	.38234-2	.62049-1	.58710-3	.73463-3	.9980	1.999590
27.90	.99933-6	.2379-3	.3839-2	.6196-1	.5984-3	.7311-3	.9981	1.99616
27.91	.99910-6	.2376-3	.3836-2	.6194-1	.5981-3	.7303-3	.9981	1.99616
27.92	.99908-6	.2373-3	.3833-2	.6192-1	.5978-3	.7295-3	.9981	1.99616
27.93	.99906-6	.2370-3	.3830-2	.6190-1	.5975-3	.7287-3	.9981	1.99617
27.94	.99905-6	.2367-3	.3827-2	.6188-1	.5972-3	.7280-3	.9981	1.99617
27.95	.99903-6	.2364-3	.3824-2	.6186-1	.5969-3	.7272-3	.9981	1.99617
27.96	.99902-6	.2361-3	.3821-2	.6184-1	.5966-3	.7264-3	.9981	1.99617
27.97	.99901-6	.2358-3	.3818-2	.6182-1	.5963-3	.7256-3	.9981	1.99618
27.98	.99900-6	.2355-3	.3815-2	.6180-1	.5960-3	.7249-3	.9981	1.99618
27.99	.99900-6	.2352-3	.3812-2	.6178-1	.5957-3	.7241-3	.9981	1.99618

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
0.121	0.2	83.644	.4482	9.11.0	3.984	228.7	1.152-2	1.071.
0.120		83.645	.4482	9.11.7	3.984	228.0	1.151-2	1.072.
0.119		83.651	.4482	9.12.4	3.984	228.2	1.149-2	1.073.
0.118		83.653	.4482	9.13.0	3.984	228.4	1.148-2	1.074.
0.117		83.656	.4482	9.13.7	3.984	228.6	1.147-2	1.075.
0.116		83.658	.4482	9.14.4	3.984	228.7	1.146-2	1.076.
0.115		83.660	.4482	9.15.1	3.984	228.9	1.145-2	1.077.
0.114		83.663	.4482	9.15.7	3.984	229.0	1.144-2	1.078.
0.113		83.665	.4482	9.16.4	3.984	230.0	1.143-2	1.078.
0.112		83.667	.4482	9.17.1	3.984	230.0	1.142-2	1.078.
0.111		83.674	.4482	9.18.4	3.984	230.4	1.139-2	1.079.
0.110		83.677	.4482	9.19.0	3.984	230.7	1.138-2	1.080.
0.109		83.679	.4482	9.20.5	3.984	231.1	1.137-2	1.081.
0.108		83.681	.4482	9.22.0	3.984	231.4	1.136-2	1.082.
0.107		83.684	.4482	9.23.5	3.984	231.7	1.135-2	1.083.
0.106		83.686	.4482	9.25.0	3.984	232.0	1.134-2	1.084.
0.105		83.693	.4482	9.26.6	3.984	232.4	1.133-2	1.085.
0.104		83.695	.4482	9.28.0	3.984	232.8	1.132-2	1.086.
0.103		83.697	.4482	9.29.5	3.984	233.0	1.131-2	1.087.
0.102		83.700	.4482	9.31.0	3.984	233.3	1.130-2	1.088.
0.101		83.702	.4482	9.32.5	3.984	233.6	1.129-2	1.089.
0.100		83.707	.4482	9.33.9	3.984	233.9	1.128-2	1.090.
0.099		83.711	.4482	9.35.4	3.984	234.2	1.127-2	1.091.
0.098		83.714	.4482	9.37.0	3.984	234.5	1.126-2	1.092.
0.097		83.716	.4482	9.38.4	3.984	234.8	1.125-2	1.093.
0.096		83.718	.4482	9.39.7	3.984	235.1	1.124-2	1.094.
0.095		83.720	.4482	9.41.0	3.984	235.4	1.123-2	1.095.
0.094		83.723	.4482	9.42.3	3.984	235.7	1.122-2	1.096.
0.093		83.725	.4482	9.43.6	3.984	236.0	1.121-2	1.097.
0.092		83.727	.4482	9.44.9	3.984	236.3	1.120-2	1.098.
0.091		83.730	.4482	9.46.2	3.984	236.6	1.119-2	1.099.
0.090		83.732	.4482	9.47.5	3.984	236.9	1.118-2	1.100.
0.089		83.734	.4482	9.47.5	3.984	237.2	1.117-2	1.101.
0.088		83.736	.4482	9.48.0	3.984	237.5	1.116-2	1.102.
0.087		83.739	.4482	9.49.3	3.984	237.8	1.115-2	1.103.
0.086		83.741	.4482	9.50.6	3.984	238.1	1.114-2	1.104.
0.085		83.743	.4482	9.51.9	3.984	238.4	1.113-2	1.105.
0.084		83.745	.4482	9.53.2	3.984	238.7	1.112-2	1.106.
0.083		83.746	.4482	9.54.5	3.984	239.0	1.111-2	1.107.
0.082		83.748	.4482	9.55.8	3.984	239.3	1.110-2	1.108.
0.081		83.750	.4482	9.57.1	3.984	239.6	1.109-2	1.109.
0.080		83.752	.4482	9.58.4	3.984	239.9	1.108-2	1.110.
0.079		83.754	.4482	9.59.7	3.984	240.2	1.107-2	1.111.
0.078		83.756	.4482	9.61.0	3.984	240.5	1.106-2	1.112.
0.077		83.759	.4482	9.62.3	3.984	240.8	1.105-2	1.113.
0.076		83.761	.4482	9.63.6	3.984	241.1	1.104-2	1.114.
0.075		83.764	.4482	9.64.9	3.984	241.4	1.103-2	1.115.
0.074		83.766	.4482	9.66.2	3.984	241.7	1.102-2	1.116.
0.073		83.768	.4482	9.67.5	3.984	242.0	1.101-2	1.117.
0.072		83.770	.4482	9.68.8	3.984	242.3	1.100-2	1.118.
0.071		83.773	.4482	9.69.1	3.984	242.6	1.100-2	1.119.
0.070		83.775	.4482	9.69.4	3.984	242.9	1.100-2	1.119.
0.069		83.777	.4482	9.69.7	3.984	243.2	1.100-2	1.119.
0.068		83.779	.4482	9.70.0	3.984	243.5	1.100-2	1.119.
0.067		83.782	.4482	9.70.3	3.984	243.8	1.100-2	1.119.
0.066		83.784	.4482	9.70.6	3.984	244.1	1.100-2	1.119.
0.065		83.786	.4482	9.70.9	3.984	244.4	1.100-2	1.119.
0.064		83.788	.4482	9.71.2	3.984	244.7	1.100-2	1.119.
0.063		83.790	.4482	9.71.5	3.984	245.0	1.100-2	1.119.
0.062		83.792	.4482	9.71.8	3.984	245.3	1.100-2	1.119.
0.061		83.794	.4481	9.72.1	3.984	245.6	1.100-2	1.119.
0.060		83.796	.4481	9.72.4	3.984	245.9	1.100-2	1.119.
0.059		83.798	.4481	9.72.7	3.984	246.2	1.100-2	1.119.
0.058		83.800	.4481	9.73.0	3.984	246.5	1.100-2	1.119.
0.057		83.802	.4481	9.73.3	3.984	246.8	1.100-2	1.119.
0.056		83.804	.4481	9.73.6	3.984	247.1	1.100-2	1.119.
0.055		83.806	.4481	9.73.9	3.984	247.4	1.100-2	1.119.
0.054		83.808	.4481	9.74.2	3.984	247.7	1.100-2	1.119.
0.053		83.810	.4481	9.74.5	3.984	248.0	1.100-2	1.119.
0.052		83.812	.4481	9.74.8	3.984	248.3	1.100-2	1.119.
0.051		83.814	.4481	9.75.1	3.984	248.6	1.100-2	1.119.
0.050		83.816	.4481	9.75.4	3.984	248.9	1.100-2	1.119.
0.049		83.818	.4481	9.75.7	3.984	249.2	1.100-2	1.119.
0.048		83.820	.4481	9.76.0	3.984	249.5	1.100-2	1.119.
0.047		83.822	.4481	9.76.3	3.984	249.8	1.100-2	1.119.

TABLE I.- VALUES FOR RATIOS OF

M	p/p <sub>t</sub>	a/p <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/p <sub>t</sub>	A*/A	V/V <sub>0</sub>	V/v <sup>*</sup>
28 .00	.8973 -6	.8354 -3	.3819 -9	.6174 -1	.5861 -3	.7233 -3	.9981	.99618
28 .01	.8956 -6	.8351 -1	.3809 -2	.6172 -1	.5861 -3	.7235 -3	.9981	.99619
28 .02	.8934 -6	.8349 -1	.3807 -2	.6170 -1	.5861 -3	.7210 -3	.9981	.99619
28 .03	.8912 -6	.8347 -1	.3804 -2	.6168 -1	.5861 -3	.7214 -3	.9981	.99619
28 .04	.8890 -6	.8344 -1	.3801 -2	.6165 -1	.5861 -3	.7208 -3	.9981	.99619
28 .05	.8867 -6	.8341 -1	.3798 -2	.6163 -1	.5861 -3	.7195 -3	.9981	.99620
28 .06	.8845 -6	.8339 -1	.3796 -2	.6163 -1	.5862 -4	.7187 -3	.9981	.99620
28 .07	.8823 -6	.8336 -1	.3794 -2	.6163 -1	.5862 -4	.7180 -3	.9981	.99620
28 .08	.8801 -6	.8334 -1	.3792 -2	.6163 -1	.5862 -4	.7173 -3	.9981	.99620
28 .09	.8779 -6	.8331 -1	.3790 -2	.6163 -1	.5862 -4	.7172 -3	.9981	.99620
28 .10	.8757 -6	.8329 -1	.3788 -2	.6163 -1	.5862 -4	.7164 -3	.9981	.99620
28 .11	.8735 -6	.8326 -1	.3785 -2	.6158 -1	.5799 -3	.7157 -3	.9981	.99621
28 .12	.8713 -6	.8324 -1	.3780 -2	.6149 -1	.5787 -3	.7145 -3	.9981	.99621
28 .13	.8691 -6	.8321 -1	.3777 -2	.6149 -1	.5781 -3	.7134 -3	.9981	.99621
28 .14	.8669 -6	.8318 -1	.3774 -2	.6149 -1	.5777 -3	.7121 -3	.9981	.99621
28 .15	.8647 -6	.8315 -1	.3772 -2	.6149 -1	.5773 -3	.7110 -3	.9981	.99621
28 .16	.8625 -6	.8312 -1	.3769 -2	.6139 -1	.5769 -3	.7109 -3	.9981	.99621
28 .17	.8603 -6	.8309 -1	.3766 -2	.6139 -1	.5757 -3	.7106 -3	.9981	.99621
28 .18	.8580 -6	.8306 -1	.3764 -2	.6139 -1	.5750 -3	.7096 -3	.9981	.99621
28 .19	.8557 -6	.8303 -1	.3761 -2	.6133 -1	.5744 -3	.7089 -3	.9981	.99621
28 .20	.8535 -6	.8300 -1	.3758 -2	.6130 -1	.5735 -3	.7081 -3	.9981	.99621
28 .21	.8513 -6	.8297 -1	.3755 -2	.6128 -1	.5732 -3	.7074 -3	.9981	.99621
28 .22	.8490 -6	.8294 -1	.3752 -2	.6126 -1	.5729 -3	.7066 -3	.9981	.99621
28 .23	.8468 -6	.8291 -1	.3749 -2	.6124 -1	.5726 -3	.7059 -3	.9981	.99621
28 .24	.8446 -6	.8289 -1	.3746 -2	.6122 -1	.5714 -3	.7051 -3	.9981	.99621
28 .25	.8423 -6	.8286 -1	.3743 -2	.6120 -1	.5708 -3	.7044 -3	.9981	.99621
28 .26	.8401 -6	.8283 -1	.3740 -2	.6118 -1	.5702 -3	.7036 -3	.9981	.99621
28 .27	.8378 -6	.8280 -1	.3737 -2	.6115 -1	.5696 -3	.7029 -3	.9981	.99621
28 .28	.8356 -6	.8277 -1	.3734 -2	.6113 -1	.5690 -3	.7021 -3	.9981	.99621
28 .29	.8333 -6	.8274 -1	.3731 -2	.6111 -1	.5684 -3	.7014 -3	.9981	.99621
28 .30	.8311 -6	.8270 -1	.3728 -2	.6109 -1	.5678 -3	.7007 -3	.9981	.99621
28 .31	.8289 -6	.8267 -1	.3725 -2	.6105 -1	.5672 -3	.6992 -3	.9981	.99621
28 .32	.8267 -6	.8264 -1	.3722 -2	.6102 -1	.5660 -3	.6985 -3	.9981	.99621
28 .33	.8245 -6	.8261 -1	.3719 -2	.6100 -1	.5654 -3	.6977 -3	.9981	.99621
28 .34	.8223 -6	.8258 -1	.3716 -2	.6096 -1	.5646 -3	.6970 -3	.9981	.99621
28 .35	.8201 -6	.8255 -1	.3713 -2	.6094 -1	.5642 -3	.6965 -3	.9981	.99621
28 .36	.8179 -6	.8252 -1	.3710 -2	.6092 -1	.5636 -3	.6955 -3	.9981	.99621
28 .37	.8157 -6	.8249 -1	.3707 -2	.6090 -1	.5631 -3	.6945 -3	.9981	.99621
28 .38	.8134 -6	.8246 -1	.3704 -2	.6088 -1	.5625 -3	.6941 -3	.9981	.99621
28 .39	.8112 -6	.8243 -1	.3701 -2	.6080 -1	.5625 -3	.6941 -3	.9981	.99621
28 .40	.8089 -6	.8240 -1	.3706 -2	.6087 -1	.5619 -3	.6933 -3	.9981	.99621
28 .41	.8067 -6	.8237 -1	.3703 -2	.6085 -1	.5613 -3	.6919 -3	.9981	.99621
28 .42	.8045 -6	.8234 -1	.3700 -2	.6083 -1	.5607 -3	.6911 -3	.9981	.99621
28 .43	.8023 -6	.8231 -1	.3696 -2	.6081 -1	.5598 -3	.6904 -3	.9981	.99621
28 .44	.8001 -6	.8228 -1	.3693 -2	.6079 -1	.5592 -3	.6897 -3	.9981	.99621
28 .45	.7979 -6	.8225 -1	.3690 -2	.6076 -1	.5583 -3	.6890 -3	.9981	.99621
28 .46	.7957 -6	.8222 -1	.3687 -2	.6073 -1	.5578 -3	.6883 -3	.9981	.99621
28 .47	.7935 -6	.8219 -1	.3684 -2	.6070 -1	.5570 -3	.6876 -3	.9981	.99621
28 .48	.7913 -6	.8216 -1	.3681 -2	.6068 -1	.5566 -3	.6868 -3	.9981	.99621
28 .49	.7890 -6	.8213 -1	.3678 -2	.6065 -1	.5561 -3	.6861 -3	.9981	.99621
28 .50	.7868 -6	.8210 -1	.3675 -2	.6063 -1	.5556 -3	.6855 -3	.9981	.99621
28 .51	.7845 -6	.8207 -1	.3672 -2	.6060 -1	.5550 -3	.6849 -3	.9981	.99621
28 .52	.7823 -6	.8204 -1	.3669 -2	.6057 -1	.5544 -3	.6842 -3	.9981	.99621
28 .53	.7800 -6	.8201 -1	.3666 -2	.6054 -1	.5538 -3	.6835 -3	.9981	.99621
28 .54	.7778 -6	.8198 -1	.3663 -2	.6052 -1	.5532 -3	.6828 -3	.9981	.99621
28 .55	.7755 -6	.8195 -1	.3660 -2	.6049 -1	.5526 -3	.6821 -3	.9981	.99621
28 .56	.7733 -6	.8192 -1	.3657 -2	.6047 -1	.5520 -3	.6814 -3	.9981	.99621
28 .57	.7710 -6	.8189 -1	.3654 -2	.6044 -1	.5514 -3	.6807 -3	.9981	.99621
28 .58	.7687 -6	.8186 -1	.3651 -2	.6041 -1	.5508 -3	.6799 -3	.9981	.99621
28 .59	.7665 -6	.8183 -1	.3648 -2	.6038 -1	.5502 -3	.6792 -3	.9981	.99621
28 .60	.7642 -6	.8180 -1	.3645 -2	.6035 -1	.5497 -3	.6785 -3	.9981	.99621
28 .61	.7619 -6	.8177 -1	.3642 -2	.6032 -1	.5491 -3	.6778 -3	.9981	.99621
28 .62	.7597 -6	.8174 -1	.3639 -2	.6029 -1	.5485 -3	.6771 -3	.9981	.99621
28 .63	.7574 -6	.8171 -1	.3636 -2	.6026 -1	.5479 -3	.6764 -3	.9981	.99621
28 .64	.7552 -6	.8168 -1	.3633 -2	.6023 -1	.5474 -3	.6757 -3	.9981	.99621
28 .65	.7529 -6	.8165 -1	.3630 -2	.6020 -1	.5468 -3	.6750 -3	.9981	.99621
28 .66	.7507 -6	.8162 -1	.3627 -2	.6017 -1	.5462 -3	.6743 -3	.9981	.99621
28 .67	.7484 -6	.8159 -1	.3624 -2	.6014 -1	.5456 -3	.6736 -3	.9981	.99621
28 .68	.7461 -6	.8156 -1	.3621 -2	.6011 -1	.5450 -3	.6729 -3	.9981	.99621
28 .69	.7438 -6	.8153 -1	.3618 -2	.6008 -1	.5444 -3	.6722 -3	.9981	.99621
28 .70	.7415 -6	.8150 -1	.3615 -2	.6005 -1	.5438 -3	.6715 -3	.9981	.99621
28 .71	.7393 -6	.8147 -1	.3612 -2	.6002 -1	.5432 -3	.6708 -3	.9981	.99621
28 .72	.7370 -6	.8144 -1	.3609 -2	.5999 -1	.5426 -3	.6701 -3	.9981	.99621
28 .73	.7347 -6	.8141 -1	.3606 -2	.5996 -1	.5420 -3	.6694 -3	.9981	.99621
28 .74	.7324 -6	.8138 -1	.3603 -2	.5993 -1	.5414 -3	.6687 -3	.9981	.99621
28 .75	.7301 -6	.8135 -1	.3600 -2	.5990 -1	.5408 -3	.6680 -3	.9981	.99621
28 .76	.7278 -6	.8132 -1	.3597 -2	.5987 -1	.5402 -3	.6673 -3	.9981	.99621
28 .77	.7255 -6	.8129 -1	.3594 -2	.5984 -1	.5396 -3	.6666 -3	.9981	.99621
28 .78	.7232 -6	.8126 -1	.3591 -2	.5981 -1	.5390 -3	.6659 -3	.9981	.99621
28 .79	.7209 -6	.8123 -1	.3588 -2	.5978 -1	.5384 -3	.6652 -3	.9981	.99621
28 .80	.7187 -6	.8120 -1	.3585 -2	.5975 -1	.5378 -3	.6645 -3	.9981	.99621
28 .81	.7164 -6	.8117 -1	.3582 -2	.5972 -1	.5372 -3	.6638 -3	.9981	.99621
28 .82	.7141 -6	.8114 -1	.3579 -2	.5969 -1	.5366 -3	.6631 -3	.9981	.99621
28 .83	.7118 -6	.8111 -1	.3576 -2	.5966 -1	.5360 -3	.6624 -3	.9981	.99621
28 .84	.7095 -6	.8108 -1	.3573 -2	.5963 -1	.5354 -3	.6617 -3	.9981	.99621
28 .85	.7072 -6	.8105 -1	.3570 -2	.5960 -1	.5348 -3	.6610 -3	.9981	.99621
28 .86	.7049 -6	.8102 -1	.3567 -2	.5957 -1	.5342 -3	.6603 -3	.9981	.99621
28 .87	.7026 -6	.8099 -1	.3564 -2	.5954 -1	.5336 -3	.6596 -3	.9981	.99621
28 .88	.7003 -6	.8096 -1	.3561 -2	.5951 -1	.5330 -3	.6589 -3	.9981	.99621
28 .89	.7079 -6	.8093 -1	.3558 -2	.5948 -1	.5324 -3	.6582 -3	.9981	.99621
28 .90	.7056 -6	.8090 -1	.3555 -2	.5945 -1	.5318 -3	.6575 -3	.9981	.99621
28 .91	.7033 -6	.8087 -1	.3552 -2	.5942 -1	.5312 -3	.6568 -3	.9981	.99621
28 .92	.7010 -6	.8084 -1	.3549 -2	.5939 -1	.5306 -3	.6561 -3	.9981	.99621
28 .93	.7027 -6	.8081 -1	.3546 -2	.5936 -1	.5300 -3	.6554 -3	.9981	.99621
28 .94	.7004 -6	.8078 -1	.3543 -2	.5933 -1	.5294 -3	.6547 -3	.9981	.99621
28 .95	.7081 -6	.8075 -1	.3540 -2	.5930 -1	.5288 -3	.6540 -3	.9981	.99621
28 .96	.7058 -6	.8072 -1	.3537 -2	.5927 -1	.5282 -3	.6533 -3	.9981	.99621
28 .97	.7035 -6	.8069 -1	.3534 -2	.5924 -1	.5276 -3	.6526 -3	.9981	.99621
28 .98	.7012 -6	.8066 -1	.3531 -2	.5921 -1	.5270 -3	.6519 -3	.9981	.99621
28 .99	.7049 -6	.8063 -1	.3528 -2	.5918 -1	.5264 -3	.6512 -3	.9981	.99621

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\nu$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
2.047	83.870	.4481	979.8	3.985	245.9	.1034-2	1152.	28.00
2.046	83.872	.4481	980.5	3.985	246.0	.1032-2	1153.	28.01
2.045	83.875	.4481	981.2	3.985	246.2	.1031-2	1154.	28.02
2.044	83.877	.4481	981.9	3.985	246.4	.1030-2	1154.	28.03
2.043	83.879	.4481	982.6	3.985	246.6	.1029-2	1155.	28.04
2.042	83.881	.4481	983.3	3.985	246.8	.1028-2	1155.	28.05
2.041	83.883	.4481	984.0	3.985	247.0	.1027-2	1155.	28.06
2.040	83.886	.4481	984.7	3.985	247.2	.1026-2	1155.	28.07
2.039	83.888	.4481	985.4	3.985	247.3	.1025-2	1155.	28.08
2.038	83.890	.4481	986.1	3.985	247.5	.1024-2	1155.	28.09
2.037	83.892	.4481	986.8	3.985	247.6	.1023-2	1160.	28.10
2.036	83.894	.4481	987.5	3.985	247.8	.1022-2	1161.	28.11
2.035	83.896	.4481	988.2	3.985	248.0	.1021-2	1162.	28.12
2.034	83.899	.4481	988.9	3.985	248.2	.1020-2	1163.	28.13
2.033	83.901	.4481	989.6	3.985	248.4	.1019-2	1164.	28.14
2.032	83.903	.4481	990.3	3.985	248.6	.1018-2	1165.	28.15
2.031	83.905	.4481	991.0	3.985	248.8	.1017-2	1165.	28.16
2.030	83.907	.4481	991.7	3.985	249.0	.1016-2	1165.	28.17
2.029	83.909	.4481	992.4	3.985	249.2	.1015-2	1166.	28.18
2.028	83.911	.4481	993.1	3.985	249.4	.1014-2	1166.	28.19
2.027	83.914	.4481	993.8	3.985	249.6	.1013-2	1169.	28.20
2.026	83.916	.4481	994.5	3.985	249.8	.1012-2	1169.	28.21
2.025	83.918	.4481	995.2	3.985	250.0	.1011-2	1170.	28.22
2.024	83.920	.4481	995.9	3.985	250.2	.1010-2	1171.	28.23
2.023	83.922	.4481	996.6	3.985	250.4	.1009-2	1172.	28.24
2.022	83.924	.4481	997.3	3.985	250.6	.1008-2	1173.	28.25
2.021	83.926	.4481	998.0	3.985	250.8	.1007-2	1174.	28.26
2.020	83.928	.4481	998.7	3.985	251.0	.1006-2	1174.	28.27
2.019	83.931	.4481	999.4	3.985	251.0	.1005-2	1175.	28.28
2.018	83.933	.4481	000.0	3.985	251.0	.1004-2	1176.	28.29
2.017	83.935	.4481	001.1	3.985	251.0	.1003-2	1177.	28.30
2.016	83.937	.4481	002.2	3.985	251.0	.1002-2	1178.	28.31
2.015	83.939	.4481	003.3	3.985	251.0	.1001-2	1179.	28.32
2.014	83.941	.4481	004.4	3.985	251.0	.1000-2	1179.	28.33
2.013	83.943	.4481	005.5	3.985	251.0	.1000-2	1180.	28.34
2.012	83.946	.4481	006.6	3.985	251.0	.1000-2	1181.	28.35
2.011	83.948	.4481	007.7	3.985	251.0	.1000-2	1182.	28.36
2.010	83.950	.4481	008.8	3.985	251.0	.1000-2	1183.	28.37
2.009	83.952	.4481	009.9	3.985	251.0	.1000-2	1184.	28.38
2.008	83.954	.4481	010.7	3.985	251.0	.1000-2	1184.	28.39
2.007	83.956	.4481	010.8	3.985	252.0	.9907-3	1185.	28.40
2.006	83.958	.4481	010.9	3.985	252.0	.9897-3	1186.	28.41
2.005	83.961	.4481	011.0	3.985	252.0	.9887-3	1187.	28.42
2.004	83.963	.4481	011.1	3.985	252.0	.9876-3	1188.	28.43
2.003	83.965	.4481	011.2	3.985	252.0	.9865-3	1189.	28.44
2.002	83.967	.4481	011.3	3.985	252.0	.9854-3	1190.	28.45
2.001	83.971	.4481	011.4	3.985	252.0	.9843-3	1191.	28.46
2.000	83.975	.4481	011.4	3.985	252.0	.9833-3	1192.	28.47
2.001	83.976	.4481	010.15	3.985	254.7	.9807-3	1194.	28.50
2.000	83.980	.4481	010.16	3.985	254.9	.9794-3	1194.	28.51
2.000	83.982	.4481	010.17	3.985	255.1	.9784-3	1195.	28.52
2.000	83.984	.4481	010.18	3.985	255.2	.9773-3	1195.	28.53
2.000	83.986	.4481	010.19	3.985	255.4	.9763-3	1197.	28.54
2.000	83.988	.4481	010.20	3.985	255.6	.9753-3	1198.	28.55
2.000	83.990	.4481	010.21	3.985	255.6	.9743-3	1199.	28.56
2.000	83.994	.4481	010.21	3.985	255.6	.9733-3	1199.	28.57
2.000	83.996	.4481	010.21	3.985	255.6	.9723-3	1200.	28.58
2.000	83.999	.4481	010.22	3.985	256.5	.9712-3	1201.	28.59
2.000	84.001	.4481	010.22	3.985	256.5	.9702-3	1202.	28.60
2.000	84.003	.4481	010.23	3.985	256.7	.9692-3	1203.	28.61
2.000	84.005	.4481	010.24	3.985	257.0	.9682-3	1204.	28.62
2.000	84.007	.4481	010.25	3.985	257.2	.9672-3	1205.	28.63
2.000	84.009	.4481	010.26	3.985	257.4	.9662-3	1206.	28.64
2.000	84.011	.4481	010.26	3.985	257.6	.9652-3	1207.	28.65
1.999	84.013	.4481	010.27	3.985	257.7	.9652-3	1208.	28.66
1.998	84.015	.4481	010.28	3.985	257.9	.9652-3	1209.	28.67
1.997	84.017	.4481	010.29	3.985	258.1	.9652-3	1209.	28.68
1.997	84.019	.4481	010.30	3.985	258.3	.9652-3	1210.	28.70
1.995	84.021	.4481	010.31	3.985	258.5	.9592-3	1211.	28.71
1.995	84.024	.4481	010.32	3.985	258.6	.9582-3	1211.	28.72
1.994	84.026	.4481	010.32	3.985	258.8	.9572-3	1211.	28.73
1.994	84.028	.4481	010.33	3.985	259.0	.9562-3	1211.	28.74
1.993	84.030	.4481	010.33	3.985	259.2	.9552-3	1211.	28.75
1.993	84.032	.4481	010.34	3.985	259.4	.9552-3	1211.	28.76
1.993	84.034	.4481	010.34	3.985	259.6	.9552-3	1211.	28.77
1.993	84.036	.4481	010.35	3.985	259.7	.9552-3	1211.	28.78
1.993	84.038	.4481	010.36	3.985	259.7	.9552-3	1211.	28.79
1.990	84.040	.4481	010.37	3.985	258.3	.9502-3	1219.	28.80
1.988	84.042	.4481	010.37	3.985	260.1	.9452-3	1220.	28.81
1.988	84.044	.4481	010.38	3.985	260.4	.9432-3	1221.	28.82
1.986	84.046	.4481	010.39	3.985	260.6	.9473-3	1222.	28.83
1.987	84.048	.4481	010.39	3.985	261.0	.9454-3	1222.	28.84
1.986	84.050	.4481	010.40	3.985	261.0	.9454-3	1222.	28.85
1.985	84.052	.4481	010.41	3.985	261.3	.9454-3	1222.	28.86
1.984	84.054	.4481	010.42	3.985	261.5	.9454-3	1222.	28.87
1.984	84.057	.4481	010.43	3.985	261.7	.9454-3	1222.	28.88
1.984	84.059	.4481	010.43	3.985	261.7	.9454-3	1222.	28.89
1.983	84.061	.4481	010.44	3.985	261.9	.9405-3	1227.	28.90
1.982	84.063	.4481	010.44	3.985	262.1	.9395-3	1228.	28.91
1.981	84.065	.4481	010.45	3.985	262.2	.9386-3	1228.	28.92
1.980	84.067	.4481	010.47	3.985	262.6	.9376-3	1228.	28.93
1.979	84.071	.4481	010.47	3.985	263.6	.9367-3	1228.	28.94
1.978	84.073	.4481	010.48	3.985	263.8	.9357-3	1233.	28.95
1.977	84.075	.4481	010.49	3.985	263.8	.9347-3	1233.	28.96
1.977	84.077	.4481	010.50	3.985	263.8	.9337-3	1233.	28.97
1.977	84.079	.4481	010.50	3.985	263.8	.9328-3	1233.	28.98

TABLE I. - VALUES FOR RATIOS OF

M	P/P <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/P <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/a <sup>*</sup>
29.00	.7533-6	.2112-3	.3555-8	.5960-1	.5079-3	.6514-3	.9988	1.99644
29.03	.7560-6	.2115-3	.3552-8	.59960-1	.5074-3	.6500-1	.9988	1.99645
29.04	.7494-6	.2113-3	.3547-8	.59956-1	.5074-3	.6490-1	.9988	1.99645
29.05	.7468-6	.2108-3	.3545-8	.59954-1	.5074-3	.6487-1	.9988	1.99645
29.06	.7435-6	.2106-3	.3540-8	.59950-1	.5074-3	.6476-1	.9988	1.99646
29.07	.7443-6	.2104-3	.3537-8	.59948-1	.5074-3	.6467-1	.9988	1.99646
29.08	.7420-6	.2102-3	.3535-8	.59946-1	.5074-3	.6456-1	.9988	1.99646
29.09	.7417-6	.2100-3	.3533-8	.59944-1	.5074-3	.6445-1	.9988	1.99646
29.10	.7405-6	.2097-3	.3530-8	.59942-1	.5074-3	.6447-1	.9988	1.99647
29.11	.7398-6	.2095-3	.3528-8	.59940-1	.5074-3	.6440-1	.9988	1.99647
29.12	.7379-6	.2093-3	.3525-8	.59937-1	.5074-3	.6434-1	.9988	1.99647
29.13	.7367-6	.2091-3	.3523-8	.59935-1	.5074-3	.6427-1	.9988	1.99648
29.14	.7354-6	.2089-3	.3521-8	.59933-1	.5074-3	.6421-1	.9988	1.99648
29.15	.7341-6	.2087-3	.3518-8	.59931-1	.5074-3	.6414-1	.9988	1.99648
29.16	.7329-6	.2085-3	.3516-8	.59929-1	.5074-3	.6408-1	.9988	1.99648
29.17	.7316-6	.2083-3	.3515-8	.59928-1	.5074-3	.6403-1	.9988	1.99648
29.18	.7303-6	.2080-3	.3513-8	.59927-1	.5074-3	.6397-1	.9988	1.99649
29.19	.7291-6	.2078-3	.3511-8	.59926-1	.5074-3	.6392-1	.9988	1.99649
29.20	.7279-6	.2076-3	.3509-8	.59925-1	.5074-3	.6387-1	.9988	1.99649
29.21	.7267-6	.2074-3	.3507-8	.59919-1	.5074-3	.6381-1	.9988	1.99649
29.22	.7254-6	.2072-3	.3505-8	.59915-1	.5074-3	.6376-1	.9988	1.99650
29.23	.7242-6	.2070-3	.3503-8	.59912-1	.5074-3	.6371-1	.9988	1.99650
29.24	.7230-6	.2068-3	.3501-8	.59910-1	.5074-3	.6366-1	.9988	1.99651
29.25	.7218-6	.2066-3	.3500-8	.59909-1	.5074-3	.6360-1	.9988	1.99651
29.26	.7205-6	.2063-3	.3498-8	.59907-1	.5074-3	.6354-1	.9988	1.99651
29.27	.7193-6	.2061-3	.3496-8	.59905-1	.5074-3	.6349-1	.9988	1.99651
29.28	.7181-6	.2059-3	.3495-8	.59903-1	.5074-3	.6343-1	.9988	1.99651
29.29	.7168-6	.2057-3	.3495-8	.59901-1	.5074-3	.6338-1	.9988	1.99651
29.30	.7156-6	.2055-3	.3488-8	.59890-1	.5074-3	.6317-1	.9988	1.99651
29.31	.7144-6	.2053-3	.3480-8	.59889-1	.5074-3	.6310-1	.9988	1.99652
29.32	.7132-6	.2051-3	.3478-8	.59888-1	.5074-3	.6302-1	.9988	1.99652
29.33	.7120-6	.2049-3	.3477-8	.59887-1	.5074-3	.6295-1	.9988	1.99652
29.34	.7108-6	.2047-3	.3473-8	.59886-1	.5074-3	.6289-1	.9988	1.99652
29.35	.7096-6	.2045-3	.3471-8	.59885-1	.5074-3	.6283-1	.9988	1.99653
29.36	.7084-6	.2043-3	.3468-8	.59884-1	.5074-3	.6278-1	.9988	1.99653
29.37	.7072-6	.2040-3	.3466-8	.59883-1	.5074-3	.6273-1	.9988	1.99653
29.38	.7060-6	.2038-3	.3463-8	.59882-1	.5074-3	.6267-1	.9988	1.99653
29.39	.7048-6	.2036-3	.3461-8	.59881-1	.5074-3	.6255-1	.9988	1.99654
29.40	.7036-6	.2034-3	.3459-8	.59880-1	.5074-3	.6250-1	.9988	1.99654
29.41	.7024-6	.2032-3	.3457-8	.59879-1	.5074-3	.6243-1	.9988	1.99654
29.42	.7012-6	.2030-3	.3455-8	.59878-1	.5074-3	.6237-1	.9988	1.99655
29.43	.6998-6	.2028-3	.3453-8	.59875-1	.5074-3	.6231-1	.9988	1.99655
29.44	.6986-6	.2026-3	.3451-8	.59873-1	.5074-3	.6225-1	.9988	1.99655
29.45	.6975-6	.2024-3	.3449-8	.59871-1	.5074-3	.6219-1	.9988	1.99655
29.46	.6963-6	.2022-3	.3447-8	.59869-1	.5074-3	.6213-1	.9988	1.99655
29.47	.6953-6	.2020-3	.3445-8	.59867-1	.5074-3	.6208-1	.9988	1.99655
29.48	.6941-6	.2018-3	.3443-8	.59865-1	.5074-3	.6202-1	.9988	1.99656
29.49	.6929-6	.2016-3	.3440-8	.59863-1	.5074-3	.6196-1	.9988	1.99656
29.50	.6918-6	.2014-3	.3435-8	.59861-1	.5074-3	.6187-1	.9988	1.99656
29.51	.6906-6	.2012-3	.3431-8	.59859-1	.5074-3	.6180-1	.9988	1.99656
29.52	.6894-6	.2010-3	.3428-8	.59857-1	.5074-3	.6177-1	.9988	1.99657
29.53	.6883-6	.2008-3	.3426-8	.59855-1	.5074-3	.6171-1	.9988	1.99657
29.54	.6871-6	.2005-3	.3423-8	.59853-1	.5074-3	.6165-1	.9988	1.99657
29.55	.6859-6	.2003-3	.3421-8	.59851-1	.5074-3	.6158-1	.9988	1.99658
29.56	.6846-6	.2000-3	.3419-8	.59849-1	.5074-3	.6152-1	.9988	1.99658
29.57	.6834-6	.1998-3	.3417-8	.59847-1	.5074-3	.6146-1	.9988	1.99658
29.58	.6823-6	.1996-3	.3415-8	.59845-1	.5074-3	.6140-1	.9988	1.99658
29.59	.6813-6	.1995-3	.3414-8	.59843-1	.5074-3	.6134-1	.9988	1.99658
29.60	.6803-6	.1993-3	.3412-8	.59842-1	.5074-3	.6127-1	.9988	1.99658
29.61	.6791-6	.1991-3	.3410-8	.59840-1	.5074-3	.6120-1	.9988	1.99659
29.62	.6779-6	.1989-3	.3408-8	.59839-1	.5074-3	.6115-1	.9988	1.99659
29.63	.6768-6	.1987-3	.3406-8	.59836-1	.5074-3	.6110-1	.9988	1.99659
29.64	.6756-6	.1985-3	.3405-8	.59834-1	.5074-3	.6103-1	.9988	1.99660
29.65	.6745-6	.1983-3	.3403-8	.59832-1	.5074-3	.6096-1	.9988	1.99660
29.66	.6733-6	.1981-3	.3401-8	.59830-1	.5074-3	.6089-1	.9988	1.99660
29.67	.6722-6	.1979-3	.3399-8	.59828-1	.5074-3	.6083-1	.9988	1.99660
29.68	.6711-6	.1977-3	.3397-8	.59826-1	.5074-3	.6077-1	.9988	1.99660
29.69	.6700-6	.1975-3	.3395-8	.59824-1	.5074-3	.6070-1	.9988	1.99661
29.70	.6689-6	.1973-3	.3389-8	.59822-1	.5074-3	.6064-1	.9988	1.99661
29.71	.6677-6	.1971-3	.3387-8	.59820-1	.5074-3	.6057-1	.9988	1.99661
29.72	.6666-6	.1969-3	.3385-8	.59818-1	.5074-3	.6050-1	.9988	1.99661
29.73	.6655-6	.1967-3	.3383-8	.59816-1	.5074-3	.6043-1	.9988	1.99662
29.74	.6643-6	.1965-3	.3381-8	.59814-1	.5074-3	.6036-1	.9988	1.99662
29.75	.6633-6	.1963-3	.3379-8	.59812-1	.5074-3	.6029-1	.9988	1.99662
29.76	.6622-6	.1961-3	.3377-8	.59809-1	.5074-3	.6023-1	.9988	1.99662
29.77	.6611-6	.1959-3	.3374-8	.59806-1	.5074-3	.6017-1	.9988	1.99662
29.78	.6600-6	.1958-3	.3371-8	.59804-1	.5074-3	.6011-1	.9988	1.99663
29.79	.6588-6	.1956-3	.3369-8	.59802-1	.5074-3	.6004-1	.9988	1.99663
29.80	.6577-6	.1954-3	.3367-8	.59802-1	.5074-3	.4868-3	.9983	1.99663
29.81	.6567-6	.1952-3	.3365-8	.59801-1	.5074-3	.4863-3	.9983	1.99663
29.82	.6556-6	.1950-3	.3363-8	.59800-1	.5074-3	.4858-3	.9983	1.99664
29.83	.6545-6	.1948-3	.3361-8	.59799-1	.5074-3	.4853-3	.9983	1.99664
29.84	.6533-6	.1946-3	.3359-8	.59798-1	.5074-3	.4848-3	.9983	1.99664
29.85	.6523-6	.1944-3	.3357-8	.59796-1	.5074-3	.4843-3	.9983	1.99664
29.86	.6512-6	.1942-3	.3355-8	.59794-1	.5074-3	.4838-3	.9983	1.99664
29.87	.6501-6	.1940-3	.3353-8	.59792-1	.5074-3	.4833-3	.9983	1.99664
29.88	.6490-6	.1938-3	.3351-8	.59789-1	.5074-3	.4828-3	.9983	1.99665
29.89	.6479-6	.1936-3	.3347-8	.59785-1	.5074-3	.4823-3	.9983	1.99665
29.90	.6469-6	.1934-3	.3344-8	.59783-1	.5074-3	.4819-3	.9983	1.99665
29.91	.6458-6	.1932-3	.3342-8	.59781-1	.5074-3	.4814-3	.9983	1.99666
29.92	.6447-6	.1930-3	.3339-8	.59779-1	.5074-3	.4809-3	.9983	1.99666
29.93	.6436-6	.1928-3	.3337-8	.59777-1	.5074-3	.4804-3	.9983	1.99666
29.94	.6426-6	.1926-3	.3335-8	.59775-1	.5074-3	.4800-3	.9983	1.99666
29.95	.6415-6	.1924-3	.3333-8	.59773-1	.5074-3	.4795-3	.9983	1.99666
29.96	.6404-6	.1922-3	.3331-8	.59771-1	.5074-3	.4790-3	.9983	1.99667
29.97	.6394-6	.1920-3	.3329-8	.59769-1	.5074-3	.4786-3	.9983	1.99667
29.98	.6383-6	.1919-3	.3327-8	.59767-1	.5074-3	.4781-3	.9983	1.99667
29.99	.6373-6	.1917-3	.3324-8	.59765-1	.5074-3	.4776-3	.9983	1.99667

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$p_2/p_1$	$p_2/b_1$	$T_2/T_1$	$p_{t,2}/p_{t,1}$	$p_{t,2}/p_1$	$M$
1.976	.84 .081	.4481	1051.	3.986	263 .7	.9302	-	1.236 .6
1.975	.84 .083	.4481	1052.	3.986	263 .9	.9289	-	1.237 .7
1.975	.84 .085	.4481	1052.	3.986	264 .0	.9280	-	1.237 .8
1.974	.84 .087	.4481	1053.	3.986	264 .4	.9270	-	1.238 .9
1.973	.84 .089	.4481	1054.	3.986	264 .8	.9261	-	1.240 .0
1.973	.84 .091	.4481	1055.	3.986	265 .0	.9251	-	1.241 .1
1.972	.84 .093	.4481	1055.	3.986	265 .1	.9242	-	1.242 .2
1.971	.84 .095	.4481	1056.	3.986	265 .3	.9238	-	1.243 .3
1.970	.84 .097	.4481	1056.	3.986	265 .3	.9223	-	1.243 .5
1.970	.84 .099	.4481	1056.	3.986	265 .3	.9223	-	1.243 .9
1.969	.84 .101	.4481	1058.	3.986	265 .5	.9213	-	1.244 .0
1.968	.84 .103	.4481	1059.	3.986	265 .7	.9204	-	1.245 .1
1.967	.84 .105	.4481	1060.	3.986	266 .0	.9185	-	1.246 .2
1.967	.84 .107	.4481	1061.	3.986	266 .4	.9176	-	1.247 .3
1.966	.84 .109	.4481	1062.	3.986	266 .6	.9166	-	1.248 .4
1.965	.84 .111	.4481	1063.	3.986	266 .8	.9157	-	1.249 .5
1.965	.84 .113	.4481	1063.	3.986	267 .0	.9148	-	1.250 .6
1.964	.84 .115	.4481	1064.	3.986	267 .0	.9138	-	1.251 .7
1.963	.84 .117	.4481	1065.	3.986	267 .1	.9129	-	1.252 .8
1.963	.84 .119	.4481	1065.	3.986	267 .1	.9129	-	1.252 .9
1.963	.84 .121	.4481	1066.	3.986	267 .3	.9120	-	1.253 .0
1.962	.84 .123	.4481	1067.	3.986	267 .7	.9101	-	1.254 .1
1.961	.84 .125	.4481	1068.	3.986	267 .9	.9092	-	1.255 .2
1.960	.84 .128	.4481	1068.	3.986	268 .1	.9082	-	1.255 .6
1.959	.84 .130	.4480	1068.	3.986	268 .2	.9073	-	1.257 .7
1.959	.84 .132	.4480	1069.	3.986	268 .4	.9065	-	1.258 .8
1.958	.84 .134	.4480	1070.	3.986	268 .6	.9055	-	1.259 .9
1.958	.84 .136	.4480	1071.	3.986	268 .6	.9045	-	1.260 .0
1.957	.84 .138	.4480	1072.	3.986	269 .0	.9036	-	1.261 .1
1.956	.84 .141	.4480	1073.	3.986	269 .2	.9027	-	1.261 .1
1.955	.84 .143	.4480	1074.	3.986	269 .5	.9018	-	1.262 .2
1.955	.84 .145	.4480	1074.	3.986	269 .5	.9009	-	1.263 .3
1.954	.84 .147	.4480	1075.	3.986	269 .7	.9000	-	1.264 .4
1.953	.84 .149	.4480	1076.	3.986	270 .1	.8981	-	1.265 .6
1.953	.84 .151	.4480	1077.	3.986	270 .1	.8972	-	1.265 .5
1.952	.84 .153	.4480	1078.	3.986	270 .4	.8963	-	1.267 .7
1.951	.84 .155	.4480	1079.	3.986	270 .6	.8954	-	1.267 .7
1.950	.84 .159	.4480	1079.	3.986	270 .8	.8945	-	1.269 .9
1.949	.84 .161	.4480	1080.	3.986	271 .0	.8936	-	1.270 .0
1.949	.84 .163	.4480	1081.	3.986	271 .2	.8927	-	1.271 .1
1.948	.84 .165	.4480	1082.	3.986	271 .4	.8918	-	1.272 .2
1.947	.84 .167	.4480	1082.	3.986	271 .5	.8909	-	1.273 .3
1.947	.84 .169	.4480	1083.	3.986	271 .9	.8891	-	1.274 .4
1.946	.84 .171	.4480	1084.	3.986	272 .1	.8882	-	1.274 .5
1.946	.84 .173	.4480	1085.	3.986	272 .3	.8873	-	1.275 .6
1.945	.84 .175	.4480	1086.	3.986	272 .5	.8864	-	1.276 .7
1.944	.84 .177	.4480	1087.	3.986	272 .6	.8855	-	1.277 .7
1.943	.84 .179	.4480	1087.	3.986	272 .6	.8855	-	1.278 .6
1.943	.84 .181	.4480	1088.	3.986	272 .8	.8846	-	1.279 .5
1.942	.84 .183	.4480	1088.	3.986	273 .0	.8837	-	1.280 .0
1.941	.84 .185	.4480	1089.	3.986	273 .2	.8828	-	1.281 .5
1.940	.84 .187	.4480	1090.	3.986	273 .4	.8819	-	1.282 .1
1.939	.84 .189	.4480	1091.	3.986	273 .6	.8810	-	1.282 .2
1.939	.84 .191	.4480	1091.	3.986	273 .6	.8801	-	1.282 .3
1.939	.84 .193	.4480	1092.	3.986	273 .9	.8792	-	1.282 .4
1.938	.84 .195	.4480	1093.	3.986	274 .3	.8783	-	1.282 .5
1.937	.84 .197	.4480	1093.	3.986	274 .3	.8774	-	1.282 .6
1.937	.84 .199	.4480	1094.	3.986	274 .5	.8766	-	1.282 .7
1.936	.84 .201	.4480	1095.	3.986	274 .7	.8757	-	1.282 .7
1.936	.84 .203	.4480	1096.	3.986	274 .9	.8748	-	1.283 .0
1.935	.84 .205	.4480	1097.	3.986	275 .0	.8739	-	1.283 .9
1.934	.84 .207	.4480	1098.	3.986	275 .2	.8730	-	1.284 .0
1.933	.84 .209	.4480	1099.	3.986	275 .4	.8722	-	1.284 .1
1.933	.84 .210	.4480	1099.	3.986	275 .6	.8713	-	1.284 .2
1.932	.84 .212	.4480	1100.	3.986	275 .8	.8704	-	1.293 .3
1.931	.84 .214	.4480	1101.	3.986	276 .0	.8695	-	1.293 .3
1.930	.84 .216	.4480	1102.	3.986	276 .2	.8687	-	1.294 .4
1.930	.84 .220	.4480	1102.	3.986	276 .5	.8669	-	1.295 .6
1.929	.84 .222	.4480	1103.	3.986	276 .7	.8650	-	1.297 .2
1.928	.84 .224	.4480	1104.	3.986	276 .9	.8632	-	1.297 .3
1.928	.84 .226	.4480	1105.	3.986	277 .3	.8614	-	1.3000
1.927	.84 .228	.4480	1105.	3.986	277 .5	.8606	-	1.3000
1.926	.84 .230	.4480	1107.	3.986	277 .6	.8597	-	1.3001
1.925	.84 .232	.4480	1108.	3.987	277 .8	.8588	-	1.3003
1.924	.84 .234	.4480	1108.	3.987	278 .0	.8560	-	1.3003
1.924	.84 .236	.4480	1109.	3.987	278 .2	.8551	-	1.3004
1.923	.84 .240	.4480	1110.	3.987	278 .4	.8533	-	1.305 .5
1.922	.84 .241	.4480	1111.	3.987	278 .6	.8514	-	1.305 .8
1.922	.84 .243	.4480	1111.	3.987	278 .8	.8495	-	1.305 .7
1.921	.84 .245	.4480	1112.	3.987	278 .9	.8476	-	1.308 .8
1.920	.84 .247	.4480	1113.	3.987	279 .1	.8458	-	1.309 .5
1.919	.84 .249	.4480	1114.	3.987	279 .3	.8450	-	1.309 .9
1.919	.84 .251	.4480	1114.	3.987	279 .5	.8451	-	1.310 .0
1.919	.84 .253	.4480	1115.	3.987	279 .7	.8452	-	1.311 .1
1.918	.84 .255	.4480	1116.	3.987	279 .9	.8454	-	1.311 .2
1.917	.84 .257	.4480	1117.	3.987	280 .1	.8456	-	1.311 .3
1.917	.84 .259	.4480	1117.	3.987	280 .3	.8447	-	1.314 .4
1.916	.84 .261	.4480	1118.	3.987	280 .4	.8439	-	1.314 .5
1.915	.84 .263	.4480	1119.	3.987	280 .6	.8430	-	1.314 .6
1.914	.84 .266	.4480	1120.	3.987	281 .0	.8422	-	1.314 .7
1.913	.84 .268	.4480	1121.	3.987	281 .2	.8413	-	1.314 .8
1.913	.84 .270	.4480	1122.	3.987	281 .4	.8405	-	1.314 .9
1.912	.84 .272	.4480	1123.	3.987	281 .6	.8407	-	1.312 .0
1.911	.84 .274	.4480	1124.	3.987	281 .7	.8401	-	1.312 .1
1.911	.84 .276	.4480	1124.	3.987	281 .9	.8401	-	1.312 .2

TABLE I.- VALUES FOR RATIOS OF

M	p/p <sub>t</sub>	ρ/ρ <sub>t</sub>	T/T <sub>t</sub>	u/u <sub>t</sub>	q/q <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/v <sup>*</sup>
30.00	.6368-6	19.15-3	.3322-2	.5764-1	.4771-3	.8387-3	.9983	1.99668
30.01	.6354-1-6	19.13-3	.3320-2	.5762-1	.4767-3	.8381-3	.9983	1.99668
30.02	.6330-6	19.09-3	.3318-2	.5758-1	.4757-3	.8375-3	.9983	1.99668
30.03	.6316-6	19.05-3	.3316-2	.5756-1	.4758-3	.8369-3	.9983	1.99668
30.04	.6302-6	19.05-3	.3314-2	.5754-1	.4748-3	.8363-3	.9983	1.99668
30.05	.6289-9-6	19.04-3	.3312-2	.5752-1	.4743-3	.8357-3	.9983	1.99669
30.06	.6288-8-6	19.03-3	.3310-2	.5751-1	.4738-3	.8352-3	.9983	1.99669
30.07	.6287-8-6	19.02-3	.3308-2	.5749-1	.4734-3	.8346-3	.9983	1.99669
30.08	.6286-8-6	19.01-3	.3306-2	.5747-1	.4729-3	.8340-3	.9983	1.99669
30.09	.6285-8-6	18.98-3	.3304-2					
30.10	.6284-7-6	18.96-3	.3302-2					
30.11	.6284-7-6	18.94-3	.3300-2					
30.12	.6284-7-6	18.92-3	.3298-2					
30.13	.6284-6-6	18.90-3	.3296-2					
30.14	.6284-6-6	18.88-3	.3294-2					
30.15	.6284-6-6	18.87-3	.3292-2					
30.16	.6284-6-6	18.86-3	.3290-2					
30.17	.6284-6-6	18.85-3	.3288-2					
30.18	.6284-6-6	18.84-3	.3286-2					
30.19	.6175-3-6	18.81-3	.3284-2					
30.20	.6175-3-6	18.79-3	.3282-2					
30.21	.6155-5-6	18.77-3	.3280-2					
30.22	.6144-6-6	18.75-3	.3278-2					
30.23	.6144-6-6	18.73-3	.3276-2					
30.24	.6144-6-6	18.71-3	.3274-2					
30.25	.6144-6-6	18.69-3	.3272-2					
30.26	.6092-6	18.68-3	.3268-2					
30.27	.6084-6	18.66-3	.3266-2					
30.28	.6074-6	18.64-3	.3264-2					
30.29	.6064-6	18.61-3	.3262-2					
30.30	.6054-6	18.59-3	.3260-2					
30.31	.6044-6	18.57-3	.3258-2					
30.32	.6034-6	18.55-3	.3256-2					
30.33	.6024-6	18.53-3	.3254-2					
30.34	.6014-6	18.51-3	.3252-2					
30.35	.6004-6	18.50-3	.3250-2					
30.36	.5998-6	18.48-3	.3248-2					
30.37	.5998-6	18.46-3	.3246-2					
30.38	.5997-6	18.44-3	.3244-2					
30.39	.5996-6	18.42-3	.3242-2					
30.40	.5955-6	18.41-3	.3240-2					
30.41	.5946-6	18.39-3	.3238-2					
30.42	.5936-6	18.37-3	.3236-2					
30.43	.5926-6	18.35-3	.3234-2					
30.44	.5917-6	18.33-3	.3232-2					
30.45	.5907-6	18.31-3	.3230-2					
30.46	.5897-6	18.29-3	.3228-2					
30.47	.5888-6	18.28-3	.3226-2					
30.48	.5878-6	18.26-3	.3224-2					
30.49	.5868-6	18.24-3	.3222-2					
30.50	.5855-6	18.23-3	.3220-2					
30.51	.5852-6	18.21-3	.3218-2					
30.52	.5850-6	18.19-3	.3216-2					
30.53	.5848-6	18.17-3	.3214-2					
30.54	.5846-6	18.15-3	.3212-2					
30.55	.5844-6	18.13-3	.3210-2					
30.56	.5841-6	18.12-3	.3208-2					
30.57	.5879-6	18.10-3	.3206-2					
30.58	.5782-6	18.08-3	.3204-2					
30.59	.5773-3-6	18.07-3	.3202-2					
30.60	.5767-6	18.05-3	.3200-2					
30.61	.5755-6	18.03-3	.3198-2					
30.62	.5744-6	18.01-3	.3196-2					
30.63	.5732-6	18.00-3	.3194-2					
30.64	.5727-6	17.98-3	.3192-2					
30.65	.5717-6	17.96-3	.3190-2					
30.66	.5708-6	17.94-3	.3188-2					
30.67	.5698-6	17.93-3	.3186-2					
30.68	.5691-6	17.91-3	.3184-2					
30.69	.5680-6	17.89-3	.3182-2					
30.70	.5673-6	17.87-3	.3177-2					
30.71	.5662-6	17.86-3	.3176-2					
30.72	.5653-6	17.84-3	.3175-2					
30.73	.5643-6	17.82-3	.3174-2					
30.74	.5634-6	17.80-3	.3173-2					
30.75	.5628-6	17.79-3	.3172-2					
30.76	.5625-6	17.78-3	.3171-2					
30.77	.5620-6	17.75-3	.3170-2					
30.78	.5558-6	17.73-3	.3169-2					
30.79	.5559-6	17.72-3	.3168-2					
30.80	.5558-6	17.70-3	.3167-2					
30.81	.5557-1-6	17.69-3	.3166-2					
30.82	.5556-1-6	17.68-3	.3165-2					
30.83	.5555-1-6	17.67-3	.3164-2					
30.84	.5554-1-6	17.66-3	.3163-2					
30.85	.5553-1-6	17.65-3	.3162-2					
30.86	.5552-6	17.64-3	.3161-2					
30.87	.5551-7-6	17.63-3	.3160-2					
30.88	.5550-6	17.62-3	.3159-2					
30.89	.5499-6	17.55-3	.3154-2					
30.90	.5490-6	17.53-3	.3152-2					
30.91	.5482-6	17.51-3	.3150-2					
30.92	.5474-3-6	17.50-3	.3148-2					
30.93	.5464-6	17.48-3	.3147-2					
30.94	.5455-6	17.46-3	.3146-2					
30.95	.5446-6	17.45-3	.3145-2					
30.96	.5435-6	17.43-3	.3143-2					
30.97	.5420-6	17.41-3	.3141-2					
30.98	.5411-6	17.38-3	.3131-2					

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/p_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/p_1$	$M$
1.910	84.278	.4480	1125.	3.987	282.1	.6413-3	1322.	30.00
1.910	84.280	.4480	1126.	3.987	282.3	.6405-3	1323.	30.01
1.909	84.284	.4480	1127.	3.987	282.7	.6396-3	1324.	30.02
1.908	84.285	.4480	1128.	3.987	283.9	.6388-3	1325.	30.03
1.907	84.287	.4480	1129.	3.987	283.1	.6380-3	1326.	30.04
1.906	84.289	.4480	1130.	3.987	283.4	.6371-3	1327.	30.05
1.905	84.291	.4480	1131.	3.987	283.7	.6363-3	1328.	30.06
1.904	84.293	.4480	1132.	3.987	283.6	.6354-3	1329.	30.07
1.904	84.295	.4480	1133.	3.987	283.8	.6346-3	1330.	30.08
1.904	84.297	.4480	1134.	3.987	284.0	.6330-3	1331.	30.10
1.903	84.299	.4480	1135.	3.987	284.2	.6322-3	1332.	30.11
1.903	84.301	.4480	1136.	3.987	284.4	.6313-3	1333.	30.12
1.903	84.302	.4480	1137.	3.987	284.6	.6305-3	1334.	30.13
1.901	84.304	.4480	1138.	3.987	284.8	.6297-3	1335.	30.14
1.901	84.306	.4480	1139.	3.987	285.0	.6289-3	1336.	30.15
1.899	84.310	.4480	1140.	3.987	285.3	.6281-3	1337.	30.16
1.899	84.312	.4480	1141.	3.987	285.5	.6272-3	1338.	30.17
1.898	84.314	.4480	1142.	3.987	285.7	.6264-3	1339.	30.18
1.898	84.316	.4480	1143.	3.987	285.9	.6248-3	1340.	30.20
1.897	84.318	.4480	1144.	3.987	286.1	.6240-3	1341.	30.21
1.896	84.319	.4480	1145.	3.987	286.3	.6232-3	1342.	30.22
1.895	84.321	.4480	1146.	3.987	286.5	.6224-3	1343.	30.23
1.894	84.323	.4480	1147.	3.987	286.6	.6215-3	1344.	30.24
1.894	84.325	.4480	1148.	3.987	286.8	.6207-3	1345.	30.25
1.894	84.327	.4480	1149.	3.987	287.0	.6199-3	1346.	30.27
1.893	84.329	.4480	1144.	3.987	287.2	.6191-3	1347.	30.28
1.893	84.331	.4480	1145.	3.987	287.4	.6183-3	1348.	30.29
1.892	84.332	.4480	1146.	3.987	287.6	.6175-3	1349.	30.30
1.891	84.334	.4480	1147.	3.987	287.8	.6167-3	1350.	30.30
1.891	84.335	.4480	1148.	3.987	288.0	.6159-3	1351.	30.31
1.890	84.336	.4480	1149.	3.987	288.2	.6151-3	1352.	30.32
1.889	84.338	.4480	1150.	3.987	288.4	.6143-3	1353.	30.33
1.888	84.340	.4480	1151.	3.987	288.6	.6135-3	1354.	30.34
1.888	84.342	.4480	1152.	3.987	288.8	.6127-3	1355.	30.35
1.887	84.344	.4480	1153.	3.987	289.0	.6119-3	1356.	30.36
1.886	84.346	.4480	1154.	3.987	289.1	.6111-3	1357.	30.37
1.886	84.347	.4480	1155.	3.987	289.3	.6103-3	1358.	30.38
1.886	84.351	.4480	1156.	3.987	289.5	.6095-3	1359.	30.39
1.885	84.353	.4480	1155.	3.987	289.7	.6087-3	1358.	30.40
1.884	84.355	.4480	1156.	3.987	289.9	.6079-3	1359.	30.41
1.884	84.357	.4480	1156.	3.987	290.1	.6071-3	1360.	30.42
1.883	84.358	.4480	1157.	3.987	290.2	.6063-3	1361.	30.43
1.883	84.360	.4480	1158.	3.987	290.4	.6055-3	1362.	30.44
1.882	84.362	.4480	1159.	3.987	290.6	.6047-3	1363.	30.45
1.881	84.364	.4480	1160.	3.987	290.8	.6040-3	1364.	30.46
1.880	84.366	.4480	1161.	3.987	291.0	.6032-3	1365.	30.47
1.880	84.370	.4480	1162.	3.987	291.2	.6016-3	1366.	30.48
1.879	84.371	.4480	1163.	3.987	291.4	.6008-3	1367.	30.50
1.878	84.373	.4480	1163.	3.987	291.6	.6000-3	1368.	30.51
1.878	84.375	.4480	1164.	3.987	291.8	.5998-3	1369.	30.52
1.877	84.377	.4480	1165.	3.987	292.0	.5985-3	1370.	30.53
1.876	84.379	.4480	1166.	3.987	292.2	.5972-3	1371.	30.54
1.875	84.381	.4480	1167.	3.987	292.4	.5959-3	1372.	30.55
1.875	84.382	.4480	1168.	3.987	292.6	.5946-3	1373.	30.56
1.874	84.384	.4480	1169.	3.987	292.8	.5933-3	1374.	30.57
1.873	84.386	.4480	1169.	3.987	293.1	.5946-3	1375.	30.58
1.873	84.388	.4480	1169.	3.987	293.3	.5938-3	1375.	30.59
1.872	84.390	.4480	1170.	3.987	293.5	.5930-3	1376.	30.60
1.872	84.392	.4480	1171.	3.987	293.7	.5923-3	1377.	30.61
1.871	84.394	.4480	1172.	3.987	293.9	.5915-3	1378.	30.62
1.870	84.397	.4480	1173.	3.987	294.1	.5907-3	1379.	30.63
1.869	84.401	.4480	1174.	3.987	294.3	.5899-3	1380.	30.64
1.868	84.403	.4480	1175.	3.987	294.4	.5884-3	1381.	30.65
1.867	84.404	.4480	1176.	3.987	294.6	.5876-3	1382.	30.66
1.867	84.406	.4480	1177.	3.987	295.2	.5861-3	1383.	30.67
1.867	84.408	.4480	1178.	3.987	295.4	.5853-3	1384.	30.68
1.866	84.410	.4480	1179.	3.987	295.6	.5845-3	1385.	30.69
1.865	84.412	.4480	1180.	3.987	295.8	.5837-3	1386.	30.70
1.864	84.415	.4480	1181.	3.987	296.0	.5829-3	1387.	30.71
1.864	84.417	.4480	1182.	3.987	296.4	.5815-3	1388.	30.72
1.863	84.419	.4480	1182.	3.987	296.6	.5808-3	1389.	30.73
1.862	84.421	.4480	1183.	3.987	296.7	.5800-3	1390.	30.74
1.862	84.422	.4480	1184.	3.987	296.9	.5793-3	1391.	30.75
1.861	84.424	.4480	1185.	3.987	297.1	.5785-3	1392.	30.76
1.861	84.426	.4480	1186.	3.987	297.3	.5778-3	1393.	30.77
1.860	84.428	.4480	1187.	3.987	297.5	.5770-3	1394.	30.78
1.859	84.430	.4480	1188.	3.987	297.7	.5762-3	1395.	30.79
1.859	84.432	.4480	1189.	3.987	297.9	.5755-3	1396.	30.80
1.858	84.433	.4480	1189.	3.987	298.1	.5747-3	1397.	30.81
1.858	84.435	.4480	1190.	3.987	298.3	.5740-3	1398.	30.82
1.857	84.437	.4480	1191.	3.987	298.5	.5732-3	1399.	30.83
1.856	84.439	.4480	1192.	3.987	298.7	.5725-3	1400.	30.84
1.855	84.440	.4480	1192.	3.987	299.1	.5718-3	1401.	30.85
1.855	84.444	.4480	1193.	3.987	299.3	.5703-3	1402.	30.86
1.854	84.446	.4480	1194.	3.987	299.4	.5695-3	1403.	30.87
1.854	84.448	.4480	1195.	3.987	299.6	.5688-3	1404.	30.88
1.853	84.449	.4480	1196.	3.987	299.8	.5680-3	1405.	30.89
1.853	84.451	.4480	1197.	3.987	300.0	.5672-3	1406.	30.90
1.852	84.453	.4480	1198.	3.988	300.2	.5664-3	1407.	30.91
1.851	84.455	.4480	1199.	3.988	300.4	.5656-3	1408.	30.92
1.850	84.457	.4480	1199.	3.988	300.6	.5648-3	1409.	30.93
1.849	84.458	.4480	1200.	3.988	301.0	.5640-3	1410.	30.94

TABLE I.- VALUES FOR RATIOS OF

M	D/D <sub>t</sub>	R/R <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	Q/Q <sub>t</sub>	A <sup>2</sup> /A	V/V <sub>0</sub>	V/V <sup>2</sup>
31.00	.5403-6	.1736-3	.3112-2	.5579-1	.4387-3	.5337-3	.9984	1.99659
31.01	.5394-6	.1734-3	.3110-2	.5577-1	.4382-3	.5338-3	.9984	1.99659
31.02	.5385-6	.1733-3	.3108-2	.5575-1	.4381-3	.5339-3	.9984	1.99659
31.03	.5376-6	.1732-3	.3106-2	.5573-1	.4380-3	.5340-3	.9984	1.99659
31.04	.5367-6	.1730-3	.3104-2	.5571-1	.4379-3	.5341-3	.9984	1.99659
31.05	.5358-6	.1728-3	.3102-2	.5569-1	.4378-3	.5342-3	.9984	1.99659
31.06	.5350-6	.1726-3	.3100-2	.5567-1	.4377-3	.5343-3	.9984	1.99659
31.07	.5342-6	.1724-3	.3098-2	.5565-1	.4376-3	.5344-3	.9984	1.99659
31.08	.5334-6	.1723-3	.3096-2	.5563-1	.4375-3	.5345-3	.9984	1.99659
31.09	.5325-6	.1721-3	.3094-2	.5562-1	.4374-3	.5346-3	.9985	1.99659
31.10	.5317-6	.1719-3	.3092-2	.5561-1	.4373-3	.5347-3	.9985	1.99659
31.11	.5310-6	.1718-3	.3090-2	.5560-1	.4372-3	.5348-3	.9985	1.99659
31.12	.5302-6	.1716-3	.3088-2	.5558-1	.4371-3	.5349-3	.9985	1.99659
31.13	.5294-6	.1714-3	.3086-2	.5557-1	.4370-3	.5350-3	.9985	1.99659
31.14	.5283-6	.1713-3	.3084-2	.5555-1	.4369-3	.5351-3	.9985	1.99659
31.15	.5274-6	.1710-3	.3082-2	.5553-1	.4368-3	.5352-3	.9985	1.99659
31.16	.5266-6	.1708-3	.3080-2	.5550-1	.4367-3	.5353-3	.9985	1.99659
31.17	.5257-6	.1706-3	.3078-2	.5548-1	.4366-3	.5354-3	.9985	1.99659
31.18	.5249-6	.1704-3	.3076-2	.5546-1	.4365-3	.5355-3	.9985	1.99659
31.19	.5241-6	.1702-3	.3074-2	.5545-1	.4364-3	.5356-3	.9985	1.99659
31.20	.5233-6	.1703-3	.3072-2	.5543-1	.4344-3	.5357-3	.9985	1.99659
31.21	.5224-6	.1702-3	.3070-2	.5542-1	.4345-3	.5358-3	.9985	1.99659
31.22	.5216-6	.1700-3	.3068-2	.5541-1	.4346-3	.5359-3	.9985	1.99659
31.23	.5207-6	.1698-3	.3066-2	.5540-1	.4347-3	.5360-3	.9985	1.99659
31.24	.5199-6	.1696-3	.3065-2	.5539-1	.4348-3	.5361-3	.9985	1.99659
31.25	.5191-6	.1694-3	.3063-2	.5538-1	.4349-3	.5362-3	.9985	1.99659
31.26	.5183-6	.1692-3	.3061-2	.5537-1	.4350-3	.5363-3	.9985	1.99659
31.27	.5174-6	.1690-3	.3059-2	.5536-1	.4351-3	.5364-3	.9985	1.99659
31.28	.5166-6	.1688-3	.3057-2	.5535-1	.4352-3	.5365-3	.9985	1.99659
31.29	.5158-6	.1686-3	.3055-2	.5534-1	.4353-3	.5366-3	.9985	1.99659
31.30	.5150-6	.1687-3	.3053-2	.5533-1	.4354-3	.5367-3	.9985	1.99659
31.31	.5142-6	.1685-3	.3051-2	.5532-1	.4355-3	.5368-3	.9985	1.99659
31.32	.5134-6	.1683-3	.3049-2	.5531-1	.4356-3	.5369-3	.9985	1.99659
31.33	.5126-6	.1682-3	.3047-2	.5530-1	.4357-3	.5370-3	.9985	1.99659
31.34	.5118-6	.1680-3	.3045-2	.5529-1	.4358-3	.5371-3	.9985	1.99659
31.35	.5110-6	.1679-3	.3043-2	.5528-1	.4359-3	.5372-3	.9985	1.99659
31.36	.5102-6	.1677-3	.3041-2	.5527-1	.4360-3	.5373-3	.9985	1.99659
31.37	.5094-6	.1676-3	.3039-2	.5526-1	.4361-3	.5374-3	.9985	1.99659
31.38	.5086-6	.1674-3	.3037-2	.5525-1	.4362-3	.5375-3	.9985	1.99659
31.39	.5078-6	.1673-3	.3035-2	.5524-1	.4363-3	.5376-3	.9985	1.99659
31.40	.5070-6	.1671-3	.3033-2	.5523-1	.4364-3	.5377-3	.9985	1.99659
31.41	.5062-6	.1669-3	.3031-2	.5522-1	.4365-3	.5378-3	.9985	1.99659
31.42	.5054-6	.1668-3	.3029-2	.5521-1	.4366-3	.5379-3	.9985	1.99659
31.43	.5046-6	.1666-3	.3027-2	.5520-1	.4367-3	.5380-3	.9985	1.99659
31.44	.5038-6	.1664-3	.3025-2	.5519-1	.4368-3	.5381-3	.9985	1.99659
31.45	.5030-6	.1663-3	.3024-2	.5518-1	.4369-3	.5382-3	.9985	1.99659
31.46	.5022-6	.1661-3	.3022-2	.5517-1	.4370-3	.5383-3	.9985	1.99659
31.47	.5014-6	.1660-3	.3020-2	.5516-1	.4371-3	.5384-3	.9985	1.99659
31.48	.5006-6	.1658-3	.3018-2	.5515-1	.4372-3	.5385-3	.9985	1.99659
31.49	.4998-6	.1657-3	.3016-2	.5514-1	.4373-3	.5386-3	.9985	1.99659
31.50	.4990-6	.1655-3	.3014-2	.5513-1	.4374-3	.5387-3	.9985	1.99659
31.51	.4982-6	.1653-3	.3012-2	.5512-1	.4375-3	.5388-3	.9985	1.99659
31.52	.4974-6	.1651-3	.3010-2	.5511-1	.4376-3	.5389-3	.9985	1.99659
31.53	.4966-6	.1649-3	.3008-2	.5510-1	.4377-3	.5390-3	.9985	1.99659
31.54	.4958-6	.1647-3	.3006-2	.5509-1	.4378-3	.5391-3	.9985	1.99659
31.55	.4950-6	.1645-3	.3004-2	.5508-1	.4379-3	.5392-3	.9985	1.99659
31.56	.4942-6	.1643-3	.3002-2	.5507-1	.4380-3	.5393-3	.9985	1.99659
31.57	.4934-6	.1641-3	.3000-2	.5506-1	.4381-3	.5394-3	.9985	1.99659
31.58	.4926-6	.1639-3	.2998-2	.5505-1	.4382-3	.5395-3	.9985	1.99659
31.59	.4918-6	.1637-3	.2996-2	.5504-1	.4383-3	.5396-3	.9985	1.99659
31.60	.4910-6	.1635-3	.2994-2	.5503-1	.4384-3	.5397-3	.9985	1.99659
31.61	.4902-6	.1633-3	.2992-2	.5502-1	.4385-3	.5398-3	.9985	1.99659
31.62	.4894-6	.1631-3	.2990-2	.5501-1	.4386-3	.5399-3	.9985	1.99659
31.63	.4886-6	.1629-3	.2988-2	.5500-1	.4387-3	.5400-3	.9985	1.99659
31.64	.4878-6	.1627-3	.2986-2	.5499-1	.4388-3	.5401-3	.9985	1.99659
31.65	.4870-6	.1625-3	.2984-2	.5498-1	.4389-3	.5402-3	.9985	1.99659
31.66	.4862-6	.1623-3	.2982-2	.5497-1	.4390-3	.5403-3	.9985	1.99659
31.67	.4854-6	.1621-3	.2980-2	.5496-1	.4391-3	.5404-3	.9985	1.99659
31.68	.4846-6	.1619-3	.2978-2	.5495-1	.4392-3	.5405-3	.9985	1.99659
31.69	.4838-6	.1617-3	.2976-2	.5494-1	.4393-3	.5406-3	.9985	1.99659
31.70	.4830-6	.1615-3	.2974-2	.5493-1	.4394-3	.5407-3	.9985	1.99659
31.71	.4822-6	.1613-3	.2972-2	.5492-1	.4395-3	.5408-3	.9985	1.99659
31.72	.4814-6	.1611-3	.2970-2	.5491-1	.4396-3	.5409-3	.9985	1.99659
31.73	.4806-6	.1609-3	.2968-2	.5490-1	.4397-3	.5410-3	.9985	1.99659
31.74	.4798-6	.1607-3	.2966-2	.5489-1	.4398-3	.5411-3	.9985	1.99659
31.75	.4790-6	.1605-3	.2964-2	.5488-1	.4399-3	.5412-3	.9985	1.99659
31.76	.4782-6	.1603-3	.2962-2	.5487-1	.4400-3	.5413-3	.9985	1.99659
31.77	.4774-6	.1601-3	.2960-2	.5486-1	.4401-3	.5414-3	.9985	1.99659
31.78	.4766-6	.1599-3	.2958-2	.5485-1	.4402-3	.5415-3	.9985	1.99659
31.79	.4758-6	.1597-3	.2956-2	.5484-1	.4403-3	.5416-3	.9985	1.99659
31.80	.4750-6	.1595-3	.2954-2	.5483-1	.4404-3	.5417-3	.9985	1.99659
31.81	.4742-6	.1593-3	.2952-2	.5482-1	.4405-3	.5418-3	.9985	1.99659
31.82	.4734-6	.1591-3	.2950-2	.5481-1	.4406-3	.5419-3	.9985	1.99659
31.83	.4726-6	.1589-3	.2948-2	.5480-1	.4407-3	.5420-3	.9985	1.99659
31.84	.4718-6	.1587-3	.2946-2	.5479-1	.4408-3	.5421-3	.9985	1.99659
31.85	.4710-6	.1585-3	.2944-2	.5478-1	.4409-3	.5422-3	.9985	1.99659
31.86	.4702-6	.1583-3	.2942-2	.5477-1	.4410-3	.5423-3	.9985	1.99659
31.87	.4694-6	.1581-3	.2940-2	.5476-1	.4411-3	.5424-3	.9985	1.99659
31.88	.4686-6	.1579-3	.2938-2	.5475-1	.4412-3	.5425-3	.9985	1.99659
31.89	.4678-6	.1577-3	.2936-2	.5474-1	.4413-3	.5426-3	.9985	1.99659
31.90	.4670-6	.1575-3	.2934-2	.5473-1	.4414-3	.5427-3	.9985	1.99659
31.91	.4662-6	.1573-3	.2932-2	.5472-1	.4415-3	.5428-3	.9985	1.99659
31.92	.4654-6	.1571-3	.2930-2	.5471-1	.4416-3	.5429-3	.9985	1.99659
31.93	.4646-6	.1569-3	.2928-2	.5470-1	.4417-3	.5430-3	.9985	1.99659
31.94	.4638-6	.1567-3	.2926-2	.5469-1	.4418-3	.5431-3	.9985	1.99659
31.95	.4630-6	.1565-3	.2924-2	.5468-1	.4419-3	.5432-3	.9985	1.99659
31.96	.4622-6	.1563-3	.2922-2	.5467-1	.4420-3	.5433-3	.9985	1.99659
31.97	.4614-6	.1561-3	.2920-2	.5466-1	.4421-3	.5434-3	.9985	1.99659
31.98	.4606-6	.1559-3	.2918-2	.5465-1	.4422-3	.5435-3	.9985	1.99659
31.99	.4598-6	.1557-3	.2916-2	.5464-1	.4423-3	.5436-3	.9985	1.99659

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/\rho_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/\rho_1$	$M$
1.849	84.462	.4480	1201.	.988	301.2	.7629-3	1412-	31.06
1.848	84.464	.4480	1202.	.988	301.6	.7814-3	1413-	31.06
1.847	84.466	.4480	1203.	.988	301.6	.7814-3	1414-	31.06
1.846	84.467	.4480	1204.	.988	302.6	.7599-3	1415-	31.06
1.846	84.469	.4480	1205.	.988	302.6	.7592-3	1416-	31.06
1.845	84.471	.4480	1206.	.988	302.6	.7585-3	1417-	31.06
1.844	84.473	.4480	1207.	.988	302.7	.7578-3	1418-	31.06
1.844	84.474	.4480	1208.	.988	302.9	.7570-3	1419-	31.06
1.843	84.476	.4480	1208.	.988	302.9	.7563-3	1420-	31.09
1.843	84.480	.4480	1209.	.988	303.1	.7556-3	1421-	31.20
1.842	84.481	.4480	1210.	.988	303.1	.7548-3	1422-	31.21
1.841	84.483	.4480	1211.	.988	303.7	.7541-3	1423-	31.22
1.841	84.485	.4480	1212.	.988	304.1	.7534-3	1424-	31.23
1.840	84.487	.4480	1213.	.988	304.1	.7527-3	1425-	31.24
1.840	84.489	.4480	1214.	.988	304.3	.7520-3	1426-	31.25
1.839	84.490	.4480	1215.	.988	304.3	.7512-3	1427-	31.26
1.838	84.492	.4479	1214.	.988	304.7	.7505-3	1428-	31.27
1.838	84.493	.4479	1215.	.988	304.7	.7498-3	1428-	31.28
1.837	84.496	.4479	1216.	.988	304.9	.7491-3	1429-	31.29
1.837	84.497	.4479	1217.	.988	305.1	.7484-3	1430-	31.30
1.836	84.499	.4479	1218.	.988	305.3	.7477-3	1431-	31.31
1.835	84.501	.4479	1219.	.988	305.5	.7469-3	1432-	31.32
1.834	84.503	.4479	1220.	.988	305.7	.7462-3	1433-	31.33
1.834	84.504	.4479	1220.	.988	306.1	.7455-3	1434-	31.34
1.833	84.506	.4479	1221.	.988	306.4	.7448-3	1435-	31.35
1.833	84.508	.4479	1221.	.988	306.4	.7441-3	1436-	31.36
1.832	84.510	.4479	1222.	.988	306.6	.7434-3	1437-	31.37
1.832	84.511	.4479	1223.	.988	306.6	.7427-3	1438-	31.38
1.831	84.513	.4479	1224.	.988	306.6	.7420-3	1439-	31.39
1.831	84.515	.4479	1224.	.988	307.0	.7413-3	1439-	31.30
1.830	84.517	.4479	1225.	.988	307.4	.7405-3	1440-	31.31
1.830	84.518	.4479	1226.	.988	307.6	.7398-3	1441-	31.32
1.829	84.520	.4479	1227.	.988	307.6	.7391-3	1442-	31.33
1.828	84.521	.4479	1228.	.988	308.0	.7384-3	1443-	31.34
1.827	84.523	.4479	1229.	.988	308.4	.7377-3	1444-	31.35
1.827	84.527	.4479	1230.	.988	308.4	.7370-3	1445-	31.36
1.826	84.528	.4479	1231.	.988	308.6	.7363-3	1446-	31.37
1.826	84.531	.4479	1231.	.988	308.6	.7356-3	1447-	31.38
1.825	84.531	.4479	1232.	.988	309.0	.7349-3	1448-	31.39
1.824	84.534	.4479	1233.	.988	309.2	.7335-3	1449-	31.40
1.823	84.536	.4479	1234.	.988	309.4	.7321-3	1450-	31.41
1.822	84.539	.4479	1235.	.988	309.6	.7314-3	1451-	31.42
1.822	84.541	.4479	1236.	.988	310.0	.7307-3	1452-	31.43
1.822	84.543	.4479	1237.	.988	310.2	.7301-3	1453-	31.44
1.821	84.544	.4479	1238.	.988	310.4	.7294-3	1454-	31.45
1.820	84.546	.4479	1239.	.988	310.6	.7287-3	1455-	31.46
1.819	84.550	.4479	1240.	.988	310.8	.7280-3	1456-	31.47
1.819	84.551	.4479	1241.	.988	311.0	.7273-3	1456-	31.48
1.818	84.553	.4479	1242.	.988	311.3	.7266-3	1457-	31.49
1.817	84.555	.4479	1243.	.988	311.5	.7259-3	1458-	31.50
1.817	84.557	.4479	1244.	.988	311.7	.7252-3	1459-	31.51
1.816	84.558	.4479	1244.	.988	311.9	.7245-3	1460-	31.52
1.816	84.560	.4479	1245.	.988	312.1	.7239-3	1461-	31.53
1.815	84.562	.4479	1246.	.988	312.3	.7232-3	1462-	31.54
1.815	84.563	.4479	1246.	.988	312.5	.7225-3	1463-	31.55
1.814	84.565	.4479	1247.	.988	312.5	.7218-3	1464-	31.56
1.813	84.567	.4479	1248.	.988	312.9	.7211-3	1465-	31.57
1.813	84.569	.4479	1249.	.988	313.3	.7204-3	1466-	31.58
1.812	84.570	.4479	1250.	.988	313.3	.7198-3	1468-	31.59
1.812	84.572	.4479	1250.	.988	313.5	.7191-3	1469-	31.60
1.811	84.574	.4479	1251.	.988	313.5	.7184-3	1470-	31.61
1.811	84.575	.4479	1252.	.988	313.9	.7177-3	1471-	31.62
1.810	84.577	.4479	1253.	.988	314.1	.7170-3	1472-	31.63
1.809	84.579	.4479	1254.	.988	314.1	.7163-3	1473-	31.64
1.809	84.581	.4479	1254.	.988	314.5	.7157-3	1474-	31.65
1.808	84.583	.4479	1255.	.988	314.5	.7150-3	1475-	31.66
1.807	84.584	.4479	1255.	.988	314.7	.7143-3	1476-	31.67
1.807	84.586	.4479	1257.	.988	315.1	.7136-3	1476-	31.68
1.806	84.587	.4479	1258.	.988	315.3	.7129-3	1477-	31.69
1.805	84.589	.4479	1261.	.988	316.1	.7097-3	1478-	31.70
1.804	84.594	.4479	1261.	.988	316.1	.7090-3	1478-	31.71
1.804	84.596	.4479	1262.	.988	316.3	.7083-3	1479-	31.72
1.803	84.598	.4479	1263.	.988	316.5	.7077-3	1480-	31.73
1.802	84.601	.4479	1264.	.988	316.9	.7070-3	1486-	31.80
1.801	84.603	.4479	1265.	.988	317.5	.7063-3	1487-	31.81
1.800	84.604	.4479	1265.	.988	317.5	.7057-3	1488-	31.82
1.800	84.608	.4479	1267.	.988	317.5	.7043-3	1489-	31.83
1.799	84.609	.4479	1268.	.988	317.9	.7037-3	1490-	31.84
1.798	84.611	.4479	1269.	.988	318.1	.7030-3	1491-	31.85
1.798	84.613	.4479	1269.	.988	318.3	.7024-3	1492-	31.86
1.797	84.614	.4479	1270.	.988	318.5	.7017-3	1493-	31.87
1.797	84.616	.4479	1271.	.988	318.7	.7011-3	1494-	31.88
1.796	84.618	.4479	1272.	.988	318.9	.7004-3	1495-	31.90
1.795	84.621	.4479	1273.	.988	319.1	.6997-3	1496-	31.91
1.795	84.623	.4479	1274.	.988	319.3	.6984-3	1497-	31.92
1.794	84.625	.4479	1275.	.988	319.7	.6978-3	1498-	31.93
1.794	84.626	.4479	1276.	.988	319.9	.6971-3	1499-	31.94
1.793	84.628	.4479	1277.	.988	320.1	.6965-3	1500-	31.95
1.792	84.630	.4479	1278.	.988	320.3	.6958-3	1501-	31.96
1.791	84.633	.4479	1279.	.988	320.7	.6945-3	1502-	31.97

TABLE I.- VALUES FOR RATIOS OF

## FUNDAMENTAL FLOW EQUATIONS

$M$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_{t,1}$	$M$
1.781	84.635	.4479	1280.	3.988	320.9	.6939-3	1505-	32.00
1.789	84.636	.4479	1281.	3.988	321.1	.6932-3	1505-	32.01
1.790	84.638	.4479	1281.	3.988	321.3	.6926-3	1506-	32.02
1.789	84.641	.4479	1283.	3.988	321.5	.6919-3	1507-	32.03
1.788	84.643	.4479	1284.	3.988	321.7	.6912-3	1508-	32.04
1.787	84.645	.4479	1285.	3.988	321.9	.6906-3	1509-	32.05
1.787	84.646	.4479	1285.	3.988	322.1	.6899-3	1510-	32.06
1.786	84.648	.4479	1286.	3.988	322.3	.6887-3	1511-	32.07
1.786	84.650	.4479	1287.	3.988	322.5	.6881-3	1512-	32.08
1.785	84.651	.4479	1288.	3.988	322.7	.6874-3	1514-	32.10
1.785	84.655	.4479	1289.	3.988	323.1	.6868-3	1515-	32.11
1.784	84.656	.4479	1290.	3.988	323.3	.6862-3	1516-	32.12
1.783	84.659	.4479	1291.	3.988	323.5	.6856-3	1517-	32.13
1.782	84.660	.4479	1292.	3.988	323.7	.6850-3	1518-	32.14
1.781	84.661	.4479	1293.	3.988	323.9	.6843-3	1519-	32.15
1.781	84.663	.4479	1293.	3.988	324.1	.6836-3	1520-	32.16
1.780	84.665	.4479	1294.	3.988	324.3	.6830-3	1521-	32.17
1.780	84.666	.4479	1295.	3.988	324.5	.6824-3	1522-	32.18
1.780	84.668	.4479	1296.	3.988	324.9	.6811-3	1523-	32.20
1.779	84.670	.4479	1297.	3.988	325.1	.6805-3	1524-	32.22
1.779	84.671	.4479	1297.	3.988	325.5	.6798-3	1525-	32.23
1.778	84.673	.4479	1298.	3.988	325.7	.6792-3	1526-	32.24
1.777	84.674	.4479	1299.	3.988	326.1	.6786-3	1527-	32.25
1.777	84.676	.4479	1300.	3.988	326.9	.6779-3	1528-	32.26
1.776	84.678	.4479	1301.	3.989	326.1	.6773-3	1529-	32.27
1.776	84.679	.4479	1301.	3.989	326.5	.6767-3	1530-	32.28
1.775	84.681	.4479	1302.	3.989	326.9	.6761-3	1531-	32.29
1.775	84.683	.4479	1303.	3.989	326.7	.6754-3	1532-	32.30
1.774	84.684	.4479	1304.	3.989	326.9	.6748-3	1533-	32.30
1.774	84.686	.4479	1305.	3.989	327.1	.6742-3	1534-	32.31
1.773	84.689	.4479	1306.	3.989	327.5	.6736-3	1535-	32.32
1.772	84.691	.4479	1307.	3.989	327.7	.6723-3	1536-	32.33
1.771	84.693	.4479	1308.	3.989	328.1	.6717-3	1537-	32.34
1.771	84.694	.4479	1309.	3.989	328.5	.6710-3	1538-	32.35
1.770	84.696	.4479	1310.	3.989	328.9	.6704-3	1539-	32.36
1.770	84.697	.4479	1310.	3.989	329.3	.6698-3	1540-	32.37
1.769	84.699	.4479	1311.	3.989	328.7	.6692-3	1541-	32.39
1.769	84.701	.4479	1312.	3.989	328.9	.6686-3	1542-	32.40
1.768	84.702	.4479	1313.	3.989	329.1	.6680-3	1543-	32.41
1.768	84.704	.4479	1314.	3.989	329.5	.6674-3	1544-	32.42
1.767	84.706	.4479	1314.	3.989	329.9	.6668-3	1545-	32.43
1.766	84.707	.4479	1315.	3.989	330.3	.6662-3	1546-	32.44
1.766	84.709	.4479	1315.	3.989	330.7	.6656-3	1547-	32.45
1.765	84.710	.4479	1316.	3.989	331.1	.6649-3	1548-	32.46
1.764	84.712	.4479	1316.	3.989	331.5	.6643-3	1549-	32.47
1.764	84.715	.4479	1319.	3.989	331.9	.6637-3	1550-	32.48
1.763	84.717	.4479	1320.	3.989	331.0	.6625-3	1551-	32.49
1.763	84.719	.4479	1321.	3.989	331.4	.6619-3	1552-	32.50
1.762	84.720	.4479	1322.	3.989	331.8	.6604-3	1553-	32.51
1.761	84.723	.4479	1323.	3.989	332.2	.6601-3	1554-	32.52
1.761	84.725	.4479	1324.	3.989	332.6	.6595-3	1555-	32.53
1.760	84.727	.4479	1325.	3.989	332.9	.6589-3	1556-	32.54
1.759	84.728	.4479	1326.	3.989	333.2	.6582-3	1557-	32.55
1.759	84.730	.4479	1327.	3.989	333.6	.6576-3	1558-	32.56
1.758	84.732	.4479	1327.	3.989	332.8	.6570-3	1559-	32.57
1.758	84.733	.4479	1328.	3.989	332.8	.6563-	1560-	32.58
1.758	84.735	.4479	1329.	3.989	333.0	.6558-3	1561-	32.59
1.757	84.736	.4479	1330.	3.989	333.2	.6552-3	1562-	32.60
1.756	84.738	.4479	1331.	3.989	333.6	.6546-3	1563-	32.61
1.756	84.740	.4479	1331.	3.989	334.0	.6540-3	1564-	32.62
1.755	84.741	.4479	1332.	3.989	334.4	.6534-3	1565-	32.63
1.755	84.743	.4479	1333.	3.989	334.8	.6528-3	1566-	32.64
1.754	84.744	.4479	1334.	3.989	334.4	.6522-3	1567-	32.65
1.754	84.746	.4479	1335.	3.989	334.8	.6516-3	1568-	32.66
1.753	84.748	.4479	1336.	3.989	334.0	.6511-3	1569-	32.67
1.752	84.749	.4479	1336.	3.989	334.4	.6505-3	1571-	32.68
1.752	84.751	.4479	1337.	3.989	335.0	.6499-3	1572-	32.71
1.751	84.752	.4479	1338.	3.989	335.4	.6495-3	1573-	32.72
1.751	84.754	.4479	1339.	3.989	335.8	.6487-3	1574-	32.73
1.750	84.756	.4479	1340.	3.989	336.1	.6481-3	1575-	32.74
1.749	84.757	.4479	1340.	3.989	336.5	.6475-3	1576-	32.75
1.749	84.759	.4479	1341.	3.989	336.8	.6469-3	1577-	32.76
1.748	84.760	.4479	1342.	3.989	336.9	.6457-3	1578-	32.77
1.748	84.764	.4479	1344.	3.989	336.9	.6451-3	1579-	32.78
1.747	84.765	.4479	1345.	3.989	337.1	.6446-3	1581-	32.80
1.747	84.767	.4479	1345.	3.989	337.3	.6440-3	1582-	32.81
1.746	84.768	.4479	1346.	3.989	337.7	.6434-3	1583-	32.82
1.745	84.770	.4479	1347.	3.989	338.1	.6428-3	1584-	32.83
1.745	84.772	.4479	1348.	3.989	338.5	.6422-3	1585-	32.84
1.744	84.773	.4479	1349.	3.989	338.7	.6416-3	1586-	32.85
1.743	84.775	.4479	1349.	3.989	338.3	.6410-3	1587-	32.86
1.743	84.776	.4479	1350.	3.989	338.5	.6405-3	1588-	32.87
1.743	84.778	.4479	1351.	3.989	338.7	.6399-3	1589-	32.88
1.742	84.780	.4479	1352.	3.989	338.9	.6393-3	1590-	32.89
1.741	84.781	.4479	1353.	3.989	339.1	.6387-3	1591-	32.90
1.741	84.784	.4479	1354.	3.989	339.3	.6381-3	1592-	32.91
1.740	84.786	.4479	1356.	3.989	339.5	.6376-3	1593-	32.92
1.740	84.787	.4479	1356.	3.989	339.7	.6370-3	1594-	32.93
1.739	84.789	.4479	1357.	3.989	340.0	.6364-3	1595-	32.94
1.739	84.791	.4479	1358.	3.989	340.2	.6358-3	1595-	32.95
1.738	84.792	.4479	1359.	3.989	340.6	.6347-3	1596-	32.96
1.738	84.794	.4479	1360.	3.989	341.0	.6341-3	1597-	32.97
1.737	84.795	.4479	1360.	3.989	341.3	.6335-3	1598-	32.98

TABLE I.- VALUES FOR RATIOS OF

M	P/P <sub>L</sub>	P/P <sub>L</sub>	T/T <sub>L</sub>	s/s <sub>L</sub>	q/q <sub>L</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/s <sup>*</sup>
33.00	.3956-6	.1440-1-3	.2747-2	.5241-1	.3590-3	.4428-1-3	.9986	1.99725
.01	.3950-6	.1457-1-3	.2745-2	.5240-1-1	.3589-3	.4424-1-3	.9986	1.99725
.02	.3949-6	.1457-1-3	.2744-2	.5239-1-1	.3588-3	.4420-1-3	.9986	1.99725
.04	.3943-6	.1457-1-3	.2742-2	.5235-1-1	.3587-3	.4416-1-3	.9986	1.99725
.05	.3943-6	.1457-1-3	.2741-2	.5234-1-1	.3586-3	.4412-1-3	.9986	1.99725
.07	.3941-6	.1430-1-3	.2737-2	.5232-1-1	.3585-3	.4408-1-3	.9986	1.99725
.09	.3940-6	.1420-1-3	.2734-2	.5230-1-1	.3584-3	.4404-1-3	.9986	1.99725
.10	.3889-7-6	.1426-1-3	.2731-2	.5226-1	.3585-3	.4398-1-3	.9986	1.99727
.11	.3888-5-6	.1424-1-3	.2729-2	.5224-1	.3584-3	.4394-1-3	.9986	1.99727
.13	.3887-9-6	.1423-1-3	.2726-2	.5221-1	.3583-3	.4376-1-3	.9986	1.99727
.14	.3887-3-6	.1421-1-3	.2723-2	.5219-1	.3582-3	.4374-1-3	.9986	1.99727
.15	.3886-7-6	.1419-1-3	.2720-2	.5216-1	.3581-3	.4368-1-3	.9986	1.99727
.16	.3886-3-6	.1419-1-3	.2719-2	.5215-1	.3580-3	.4364-1-3	.9986	1.99727
.17	.3885-6-6	.1417-1-3	.2716-2	.5213-1	.3579-3	.4360-1-3	.9986	1.99727
.18	.3885-0-6	.1415-1-3	.2713-2	.5212-1	.3578-3	.4356-1-3	.9986	1.99727
.19	.3884-4-6	.1415-1-3	.2710-2	.5211-1	.3579-3	.4352-1-3	.9986	1.99727
.20	.3883-9-6	.1414-1-3	.2714-2	.5210-1	.3580-3	.4349-1-3	.9986	1.99728
.21	.3883-3-6	.1413-1-3	.2711-2	.5209-1	.3579-3	.4345-1-3	.9986	1.99728
.23	.3882-7-6	.1410-1-3	.2709-2	.5208-1	.3578-3	.4337-1-3	.9986	1.99728
.24	.3882-3-6	.1409-1-3	.2706-2	.5207-1	.3577-3	.4333-1-3	.9986	1.99728
.25	.3880-0-6	.1407-1-3	.2703-2	.5206-1	.3576-3	.4329-1-3	.9986	1.99728
.26	.3880-4-6	.1405-1-3	.2701-2	.5205-1	.3575-3	.4325-1-3	.9986	1.99728
.27	.3879-7-6	.1404-1-3	.2700-2	.5204-1	.3574-3	.4321-1-3	.9986	1.99728
.28	.3878-3-6	.1403-1-3	.2700-2	.5203-1	.3573-3	.4314-1-3	.9986	1.99728
.30	.3781-6-6	.1401-1-3	.2698-2	.5199-1	.3572-3	.4310-1-3	.9987	1.99730
.31	.3777-6-6	.1400-1-3	.2696-2	.5198-1	.3571-3	.4306-1-3	.9987	1.99730
.32	.3776-1-6	.1399-1-3	.2695-2	.5196-1	.3570-3	.4302-1-3	.9987	1.99730
.34	.3773-6-6	.1398-1-3	.2693-2	.5194-1	.3569-3	.4298-1-3	.9987	1.99731
.35	.3773-3-6	.1397-1-3	.2690-2	.5193-1	.3568-3	.4294-1-3	.9987	1.99731
.36	.3774-6-6	.1396-1-3	.2688-2	.5192-1	.3567-3	.4289-1-3	.9987	1.99731
.37	.3774-3-6	.1395-1-3	.2685-2	.5191-1	.3566-3	.4285-1-3	.9987	1.99731
.38	.3773-6-6	.1394-1-3	.2684-2	.5190-1	.3565-3	.4279-1-3	.9987	1.99731
.39	.3773-1-6	.1393-1-3	.2682-2	.5189-1	.3564-3	.4275-1-3	.9987	1.99731
.40	.3778-6-6	.1386-1-3	.2680-2	.5188-1	.3563-3	.4271-1-3	.9987	1.99732
.41	.3778-0-6	.1386-1-3	.2678-2	.5187-1	.3562-3	.4267-1-3	.9987	1.99732
.42	.3778-4-6	.1386-1-3	.2676-2	.5186-1	.3561-3	.4263-1-3	.9987	1.99732
.43	.3778-7-6	.1385-1-3	.2674-2	.5185-1	.3560-3	.4259-1-3	.9987	1.99732
.44	.3778-3-6	.1384-1-3	.2672-2	.5184-1	.3559-3	.4255-1-3	.9987	1.99732
.45	.3698-6-6	.1383-1-3	.2670-2	.5183-1	.3558-3	.4251-1-3	.9987	1.99732
.46	.3698-2-6	.1380-1-3	.2667-2	.5182-1	.3557-3	.4248-1-3	.9987	1.99732
.47	.3687-6-6	.1379-1-3	.2665-2	.5181-1	.3556-3	.4244-1-3	.9987	1.99733
.48	.3687-1-6	.1379-1-3	.2663-2	.5180-1	.3555-3	.4241-1-3	.9987	1.99733
.49	.3687-6-6	.1379-1-3	.2661-2	.5179-1	.3554-3	.4237-1-3	.9987	1.99733
.50	.3670-6-6	.1377-1-3	.2659-2	.5178-1	.3553-3	.4233-1-3	.9987	1.99733
.51	.3665-9-6	.1375-1-3	.2656-2	.5177-1	.3552-3	.4229-1-3	.9987	1.99733
.52	.3665-4-6	.1374-1-3	.2654-2	.5176-1	.3551-3	.4225-1-3	.9987	1.99734
.53	.3664-9-6	.1373-1-3	.2652-2	.5175-1	.3550-3	.4221-1-3	.9987	1.99734
.54	.3664-4-6	.1372-1-3	.2650-2	.5174-1	.3549-3	.4217-1-3	.9987	1.99734
.55	.3664-8-6	.1370-1-3	.2648-2	.5173-1	.3548-3	.4214-1-3	.9987	1.99734
.56	.3663-6-6	.1369-1-3	.2646-2	.5172-1	.3547-3	.4210-1-3	.9987	1.99734
.57	.3663-0-6	.1368-1-3	.2644-2	.5171-1	.3546-3	.4206-1-3	.9987	1.99734
.58	.3663-4-6	.1366-1-3	.2642-2	.5170-1	.3545-3	.4202-1-3	.9987	1.99734
.59	.3662-8-6	.1365-1-3	.2640-2	.5169-1	.3544-3	.4198-1-3	.9987	1.99734
.60	.3616-6-6	.1364-1-3	.2650-2	.5140-1	.3408-3	.4196-1-3	.9987	1.99735
.61	.3613-6-6	.1363-1-3	.2649-2	.5147-1	.3406-3	.4192-1-3	.9987	1.99735
.62	.3603-6-6	.1360-1-3	.2647-2	.5145-1	.3405-3	.4188-1-3	.9987	1.99735
.63	.3559-3-6	.1356-1-3	.2644-2	.5143-1	.3404-3	.4184-1-3	.9987	1.99735
.64	.3559-7-6	.1355-1-3	.2642-2	.5142-1	.3403-3	.4180-1-3	.9987	1.99735
.65	.3559-4-6	.1354-1-3	.2640-2	.5141-1	.3402-3	.4176-1-3	.9987	1.99735
.66	.3557-6-6	.1353-1-3	.2638-2	.5140-1	.3401-3	.4172-1-3	.9987	1.99736
.67	.3557-3-6	.1352-1-3	.2636-2	.5139-1	.3400-3	.4168-1-3	.9987	1.99736
.68	.3556-6-6	.1351-1-3	.2634-2	.5138-1	.3400-3	.4164-1-3	.9987	1.99736
.69	.3556-3-6	.1350-1-3	.2632-2	.5137-1	.3400-3	.4160-1-3	.9987	1.99736
.70	.3556-6-6	.1349-1-3	.2630-2	.5136-1	.3400-3	.4156-1-3	.9987	1.99736
.71	.3556-0-6	.1348-1-3	.2628-2	.5135-1	.3400-3	.4152-1-3	.9987	1.99736
.72	.3555-7-6	.1347-1-3	.2626-2	.5134-1	.3400-3	.4148-1-3	.9987	1.99737
.73	.3554-2-6	.1346-1-3	.2624-2	.5133-1	.3400-3	.4144-1-3	.9987	1.99737
.74	.3553-7-6	.1345-1-3	.2622-2	.5132-1	.3400-3	.4140-1-3	.9987	1.99737
.75	.3553-3-6	.1344-1-3	.2620-2	.5131-1	.3400-3	.4136-1-3	.9987	1.99737
.76	.3552-6-6	.1343-1-3	.2618-2	.5130-1	.3400-3	.4132-1-3	.9987	1.99737
.77	.3552-1-6	.1342-1-3	.2616-2	.5129-1	.3400-3	.4128-1-3	.9987	1.99737
.78	.3551-6-6	.1341-1-3	.2614-2	.5128-1	.3400-3	.4124-1-3	.9987	1.99737
.79	.3551-1-6	.1340-1-3	.2612-2	.5127-1	.3400-3	.4120-1-3	.9987	1.99737
.80	.3510-6-6	.1339-1-3	.2610-2	.5126-1	.3400-3	.4116-1-3	.9987	1.99738
.81	.3508-6-6	.1338-1-3	.2608-2	.5125-1	.3400-3	.4112-1-3	.9987	1.99738
.82	.3506-6-6	.1337-1-3	.2606-2	.5124-1	.3400-3	.4108-1-3	.9987	1.99738
.83	.3504-6-6	.1336-1-3	.2604-2	.5123-1	.3400-3	.4104-1-3	.9987	1.99738
.84	.3499-6-6	.1335-1-3	.2602-2	.5122-1	.3400-3	.4100-1-3	.9987	1.99739
.85	.3485-6-6	.1334-1-3	.2600-2	.5121-1	.3400-3	.4096-1-3	.9987	1.99739
.86	.3480-6-6	.1333-1-3	.2598-2	.5120-1	.3400-3	.4092-1-3	.9987	1.99739
.87	.3474-1-6	.1332-1-3	.2596-2	.5119-1	.3400-3	.4088-1-3	.9987	1.99739
.88	.3469-6-6	.1331-1-3	.2594-2	.5118-1	.3400-3	.4084-1-3	.9987	1.99739
.89	.3464-6-6	.1330-1-3	.2592-2	.5117-1	.3400-3	.4080-1-3	.9987	1.99739
.90	.3459-6-6	.1329-1-3	.2590-2	.5116-1	.3400-3	.4076-1-3	.9987	1.99739
.91	.3454-6-6	.1328-1-3	.2588-2	.5115-1	.3400-3	.4072-1-3	.9987	1.99740
.92	.3449-6-6	.1327-1-3	.2586-2	.5114-1	.3400-3	.4070-1-3	.9987	1.99740
.93	.3444-6-6	.1326-1-3	.2584-2	.5113-1	.3400-3	.4066-1-3	.9987	1.99740
.94	.3439-6-6	.1325-1-3	.2582-2	.5112-1	.3400-3	.4062-1-3	.9987	1.99740
.95	.3435-6-6	.1324-1-3	.2580-2	.5111-1	.3400-3	.4058-1-3	.9987	1.99740
.96	.3431-6-6	.1323-1-3	.2578-2	.5110-1	.3400-3	.4054-1-3	.9987	1.99740
.97	.3426-6-6	.1322-1-3	.2576-2	.5109-1	.3400-3	.4050-1-3	.9987	1.99740
.98	.3421-6-6	.1321-1-3	.2574-2	.5108-1	.3400-3	.4046-1-3	.9987	1.99741
.99	.3416-4-6	.1320-1-3	.2572-2	.5107-1	.3400-3	.4042-1-3	.9987	1.99741

## FUNDAMENTAL FLOW EQUATIONS

$M$	$V$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
1.737	84.797	4479	1361.	3.989	341.2	.6330-3	1600.	33.00
1.736	84.798	4479	1362.	3.989	341.4	.63324-3	1601.	33.01
1.735	84.800	4479	1363.	3.989	341.6	.63341-3	1602.	33.02
1.734	84.802	4479	1364.	3.989	341.8	.63357-3	1603.	33.03
1.733	84.803	4479	1365.	3.989	342.0	.63373-3	1604.	33.04
1.732	84.805	4479	1366.	3.989	342.2	.63389-3	1605.	33.05
1.731	84.806	4479	1367.	3.989	342.4	.63401-3	1606.	33.06
1.730	84.808	4479	1368.	3.989	342.6	.63417-3	1607.	33.07
1.729	84.811	4479	1368.	3.989	343.0	.63428-3	1608.	33.08
1.728	84.813	4479	1369.	3.989	343.5	.63438-3	1609.	33.09
1.727	84.814	4479	1370.	3.989	343.5	.63448-3	1610.	33.10
1.726	84.816	4479	1371.	3.989	343.7	.63458-3	1611.	33.11
1.725	84.817	4479	1372.	3.989	343.9	.63468-3	1612.	33.12
1.724	84.819	4479	1373.	3.989	344.1	.63478-3	1613.	33.13
1.723	84.820	4479	1374.	3.989	344.3	.63488-3	1614.	33.14
1.722	84.822	4479	1375.	3.989	344.5	.63498-3	1615.	33.15
1.721	84.823	4479	1376.	3.989	344.7	.63508-3	1616.	33.16
1.720	84.825	4479	1377.	3.989	344.9	.63518-3	1617.	33.17
1.719	84.827	4479	1377.	3.989	345.1	.63528-3	1618.	33.18
1.726	84.828	4479	1378.	3.989	345.3	.63538-3	1619.	33.19
1.725	84.830	4479	1379.	3.989	345.5	.63548-3	1620.	33.20
1.724	84.831	4479	1380.	3.989	345.7	.63558-3	1621.	33.21
1.723	84.833	4479	1381.	3.989	345.9	.63568-3	1622.	33.22
1.722	84.834	4479	1382.	3.989	346.2	.63578-3	1623.	33.23
1.721	84.836	4479	1383.	3.989	346.4	.63588-3	1624.	33.24
1.720	84.837	4479	1383.	3.989	346.6	.63598-3	1625.	33.25
1.719	84.839	4479	1383.	3.989	346.8	.63608-3	1626.	33.26
1.718	84.841	4479	1384.	3.989	347.0	.63618-3	1627.	33.27
1.717	84.842	4479	1385.	3.989	347.0	.63628-3	1628.	33.28
1.721	84.844	4479	1386.	3.989	347.4	.6161-3	1629.	33.30
1.720	84.845	4479	1387.	3.989	347.6	.6155-3	1630.	33.31
1.719	84.847	4479	1388.	3.989	347.8	.6150-3	1631.	33.32
1.719	84.848	4479	1388.	3.989	348.0	.6144-3	1632.	33.33
1.719	84.850	4479	1389.	3.989	348.2	.61393-3	1633.	33.34
1.718	84.851	4479	1389.	3.989	348.4	.61344-3	1634.	33.35
1.717	84.852	4479	1389.	3.989	348.6	.61293-3	1635.	33.36
1.717	84.854	4479	1393.	3.989	348.7	.61243-3	1636.	33.37
1.716	84.855	4479	1393.	3.989	349.0	.6117-3	1637.	33.38
1.716	84.856	4479	1393.	3.989	349.3	.6111-3	1638.	33.39
1.715	84.859	4479	1394.	3.989	349.5	.6106-3	1639.	33.40
1.715	84.861	4479	1395.	3.989	349.7	.6100-3	1640.	33.41
1.715	84.862	4479	1396.	3.989	349.9	.6095-3	1641.	33.42
1.714	84.864	4479	1396.	3.989	350.0	.6090-3	1642.	33.43
1.714	84.865	4479	1398.	3.989	350.3	.6084-3	1643.	33.44
1.713	84.867	4479	1398.	3.989	350.5	.6079-3	1644.	33.45
1.713	84.868	4479	1399.	3.989	350.7	.6073-3	1645.	33.46
1.712	84.870	4479	1400.	3.989	351.0	.6068-3	1646.	33.47
1.712	84.871	4479	1401.	3.989	351.2	.6062-3	1647.	33.48
1.711	84.873	4479	1408.	3.989	351.4	.6057-3	1648.	33.49
1.711	84.874	4479	1403.	3.989	351.6	.6058-3	1649.	33.50
1.710	84.876	4479	1403.	3.989	352.0	.6046-3	1650.	33.51
1.709	84.877	4479	1404.	3.989	352.2	.6041-3	1651.	33.52
1.709	84.879	4478	1405.	3.989	352.4	.6036-3	1652.	33.53
1.708	84.880	4478	1406.	3.989	352.6	.6030-3	1653.	33.54
1.708	84.882	4478	1407.	3.989	352.8	.6025-3	1654.	33.55
1.707	84.884	4478	1408.	3.989	353.0	.6019-3	1655.	33.56
1.706	84.885	4478	1409.	3.989	353.3	.6014-3	1656.	33.57
1.706	84.887	4478	1410.	3.989	353.5	.6009-3	1657.	33.58
1.705	84.890	4478	1411.	3.989	353.7	.5998-3	1658.	33.59
1.705	84.891	4478	1412.	3.989	353.9	.5993-3	1659.	33.60
1.704	84.893	4478	1413.	3.989	354.1	.5988-3	1660.	33.61
1.704	84.894	4478	1413.	3.989	354.3	.5983-3	1661.	33.62
1.703	84.895	4478	1414.	3.989	354.5	.5978-3	1662.	33.63
1.703	84.897	4478	1414.	3.989	354.7	.5973-3	1663.	33.64
1.702	84.898	4478	1415.	3.989	354.9	.5967-3	1664.	33.65
1.702	84.900	4478	1416.	3.989	355.1	.5961-3	1665.	33.66
1.701	84.903	4478	1419.	3.989	355.4	.5955-3	1666.	33.67
1.700	84.905	4478	1419.	3.989	355.6	.5950-3	1667.	33.68
1.700	84.906	4478	1420.	3.989	355.8	.5945-3	1668.	33.69
1.699	84.908	4478	1421.	3.989	356.0	.5940-3	1669.	33.70
1.699	84.909	4478	1421.	3.989	356.2	.5935-3	1670.	33.71
1.698	84.921	4478	1422.	3.989	356.4	.5929-3	1671.	33.72
1.698	84.924	4478	1423.	3.989	356.6	.5924-3	1672.	33.73
1.697	84.924	4478	1423.	3.989	356.8	.5919-3	1673.	33.74
1.697	84.927	4478	1424.	3.989	357.0	.5914-3	1674.	33.75
1.697	84.929	4478	1424.	3.989	357.2	.5909-3	1675.	33.76
1.696	84.930	4478	1424.	3.989	357.4	.5904-3	1676.	33.77
1.696	84.931	4478	1425.	3.989	357.5	.5900-3	1677.	33.78
1.696	84.933	4478	1425.	3.989	357.7	.5896-3	1678.	33.79
1.695	84.936	4478	1426.	3.989	357.9	.5892-3	1679.	33.80
1.695	84.938	4478	1427.	3.989	358.1	.5888-3	1680.	33.81
1.694	84.941	4478	1428.	3.989	358.3	.5884-3	1681.	33.82
1.694	84.942	4478	1429.	3.989	358.5	.5880-3	1682.	33.83
1.693	84.943	4478	1430.	3.989	358.7	.5876-3	1683.	33.84
1.693	84.946	4478	1430.	3.989	358.9	.5872-3	1684.	33.85
1.692	84.947	4478	1431.	3.989	359.2	.5868-3	1685.	33.86
1.692	84.948	4478	1431.	3.989	359.4	.5864-3	1686.	33.87
1.691	84.949	4478	1432.	3.989	359.6	.5860-3	1687.	33.88
1.691	84.950	4478	1432.	3.989	359.8	.5856-3	1688.	33.89
1.690	84.953	4478	1433.	3.989	360.0	.5852-3	1689.	33.90
1.689	84.956	4478	1433.	3.989	360.2	.5848-3	1690.	33.91
1.689	84.958	4478	1434.	3.989	360.4	.5844-3	1691.	33.92
1.688	84.961	4478	1434.	3.989	360.6	.5840-3	1692.	33.93
1.688	84.962	4478	1435.	3.989	360.9	.5836-3	1693.	33.94
1.687	84.964	4478	1435.	3.989	361.1	.5832-3	1694.	33.95
1.687	84.965	4478	1436.	3.989	361.3	.5828-3	1695.	33.96
1.686	84.967	4478	1436.	3.989	361.5	.5824-3	1696.	33.97
1.686	84.968	4478	1437.	3.989	361.7	.5820-3	1697.	33.98

TABLE I.- VALUES FOR RATIOS OF

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
1.685	84.950	4478	1445.	3.990	362.1	5.790-3	1698.	34.00
1.685	84.953	4478	1446.	3.990	362.5	5.784-3	1699.	34.01
1.684	84.954	4478	1446.	3.990	362.5	5.779-3	1700.	34.02
1.683	84.955	4478	1446.	3.990	362.6	5.774-3	1701.	34.03
1.683	84.957	4478	1446.	3.990	362.0	5.766-3	1702.	34.04
1.682	84.958	4478	1450.	3.990	362.4	5.759-3	1703.	34.05
1.682	84.960	4478	1450.	3.990	362.6	5.751-3	1704.	34.06
1.681	84.961	4478	1450.	3.990	362.6	5.743-3	1705.	34.07
1.681	84.963	4478	1450.	3.990	362.0	5.744-3	1706.	34.08
1.680	84.964	4478	1453.	3.990	364.3	5.739-3	1708.	34.10
1.680	84.966	4478	1454.	3.990	364.5	5.734-3	1709.	34.11
1.679	84.967	4478	1455.	3.990	364.7	5.729-3	1710.	34.12
1.679	84.969	4478	1456.	3.990	364.9	5.724-3	1711.	34.13
1.678	84.970	4478	1457.	3.990	365.1	5.719-3	1712.	34.14
1.678	84.972	4478	1458.	3.990	365.3	5.714-3	1713.	34.15
1.678	84.973	4478	1459.	3.990	365.5	5.709-3	1714.	34.16
1.677	84.975	4478	1460.	3.990	366.7	5.704-3	1715.	34.17
1.676	84.976	4478	1461.	3.990	366.0	5.699-3	1716.	34.18
1.676	84.978	4478	1461.	3.990	366.2	5.694-3	1717.	34.19
1.676	84.979	4478	1462.	3.990	366.4	5.689-3	1718.	34.20
1.675	84.981	4478	1463.	3.990	366.6	5.684-3	1719.	34.21
1.675	84.982	4478	1464.	3.990	366.8	5.679-3	1720.	34.22
1.674	84.983	4478	1464.	3.990	367.0	5.674-3	1721.	34.23
1.673	84.985	4478	1465.	3.990	367.2	5.669-3	1722.	34.24
1.673	84.986	4478	1466.	3.990	367.5	5.664-3	1723.	34.25
1.673	84.988	4478	1467.	3.990	367.7	5.659-3	1723.	34.26
1.672	84.989	4478	1468.	3.990	367.9	5.654-3	1726.	34.27
1.672	84.991	4478	1469.	3.990	368.1	5.649-3	1727.	34.28
1.671	84.992	4478	1470.	3.990	368.3	5.645-3	1728.	34.29
1.671	84.994	4478	1470.	3.990	368.5	5.640-3	1729.	34.30
1.670	84.995	4478	1471.	3.990	368.7	5.635-3	1730.	34.31
1.670	84.997	4478	1472.	3.990	369.0	5.630-3	1731.	34.32
1.669	84.998	4478	1473.	3.990	369.2	5.625-3	1732.	34.33
1.669	84.999	4478	1474.	3.990	369.4	5.620-3	1733.	34.34
1.668	85.001	4478	1475.	3.990	369.6	5.615-3	1734.	34.35
1.668	85.002	4478	1476.	3.990	369.8	5.610-3	1735.	34.36
1.667	85.004	4478	1476.	3.990	370.0	5.605-3	1736.	34.37
1.667	85.005	4478	1477.	3.990	370.2	5.600-3	1737.	34.38
1.666	85.007	4478	1478.	3.990	370.5	5.596-3	1738.	34.39
1.666	85.008	4478	1479.	3.990	370.7	5.591-3	1739.	34.40
1.665	85.010	4478	1480.	3.990	370.9	5.586-3	1740.	34.41
1.664	85.011	4478	1481.	3.990	371.1	5.581-3	1741.	34.42
1.664	85.013	4478	1482.	3.990	371.3	5.576-3	1742.	34.43
1.663	85.015	4478	1483.	3.990	371.5	5.565-3	1743.	34.44
1.663	85.017	4478	1484.	3.990	371.8	5.562-3	1744.	34.45
1.662	85.018	4478	1485.	3.990	372.0	5.562-3	1745.	34.46
1.661	85.020	4478	1486.	3.990	372.2	5.558-3	1746.	34.47
1.661	85.021	4478	1487.	3.990	372.4	5.547-3	1748.	34.49
1.661	85.023	4478	1488.	3.990	372.6	5.547-3	1748.	34.49
1.660	85.024	4478	1488.	3.990	373.0	5.535-3	1750.	34.51
1.660	85.026	4478	1489.	3.990	373.0	5.533-3	1751.	34.52
1.660	85.028	4478	1490.	3.990	373.5	5.528-3	1752.	34.53
1.659	85.030	4478	1491.	3.990	373.7	5.524-3	1753.	34.54
1.658	85.031	4478	1492.	3.990	373.9	5.519-3	1754.	34.55
1.658	85.033	4478	1493.	3.990	374.1	5.514-3	1755.	34.56
1.657	85.034	4478	1494.	3.990	374.3	5.509-3	1756.	34.57
1.657	85.036	4478	1495.	3.990	374.6	5.504-3	1757.	34.58
1.656	85.037	4478	1496.	3.990	375.0	5.495-3	1759.	34.60
1.656	85.038	4478	1497.	3.990	375.2	5.490-3	1760.	34.61
1.655	85.040	4478	1498.	3.990	375.4	5.485-3	1761.	34.62
1.655	85.041	4478	1499.	3.990	375.6	5.481-3	1762.	34.63
1.654	85.043	4478	1500.	3.990	375.9	5.476-3	1763.	34.64
1.653	85.046	4478	1501.	3.990	376.1	5.471-3	1764.	34.65
1.653	85.047	4478	1502.	3.990	376.5	5.462-3	1765.	34.66
1.652	85.048	4478	1503.	3.990	376.7	5.457-3	1767.	34.68
1.652	85.050	4478	1504.	3.990	376.9	5.458-3	1768.	34.69
1.651	85.051	4478	1505.	3.990	377.2	5.448-3	1769.	34.70
1.651	85.053	4478	1506.	3.990	377.4	5.443-3	1770.	34.71
1.650	85.054	4478	1507.	3.990	377.6	5.448-3	1771.	34.72
1.650	85.056	4478	1508.	3.990	377.8	5.449-3	1772.	34.73
1.649	85.057	4478	1509.	3.990	378.0	5.442-3	1773.	34.74
1.649	85.058	4478	1510.	3.990	378.3	5.437-3	1774.	34.75
1.648	85.063	4478	1510.	3.990	378.7	5.430-3	1775.	34.76
1.648	85.073	4478	1510.	3.990	378.9	5.424-3	1776.	34.77
1.647	85.064	4478	1513.	3.990	379.1	5.406-3	1777.	34.78
1.647	85.065	4478	1514.	3.990	379.3	5.401-3	1779.	34.80
1.646	85.067	4478	1514.	3.990	379.5	5.396-3	1780.	34.81
1.646	85.068	4478	1515.	3.990	379.8	5.392-3	1781.	34.82
1.645	85.070	4478	1516.	3.990	380.0	5.387-3	1782.	34.83
1.645	85.071	4478	1517.	3.990	380.2	5.381-3	1783.	34.84
1.644	85.073	4478	1518.	3.990	380.4	5.378-3	1784.	34.85
1.644	85.074	4478	1519.	3.990	380.6	5.373-3	1785.	34.86
1.643	85.075	4478	1520.	3.990	380.8	5.369-3	1786.	34.87
1.643	85.077	4478	1521.	3.990	381.1	5.364-3	1787.	34.88
1.642	85.078	4478	1521.	3.990	381.3	5.359-3	1789.	34.89
1.642	85.080	4478	1522.	3.990	381.5	5.355-3	1790.	34.90
1.641	85.082	4478	1523.	3.990	381.7	5.350-3	1791.	34.91
1.641	85.084	4478	1525.	3.990	382.2	5.346-3	1792.	34.92
1.640	85.085	4478	1526.	3.990	382.4	5.341-3	1793.	34.93
1.640	85.087	4478	1527.	3.990	382.6	5.337-3	1794.	34.94
1.639	85.088	4478	1528.	3.990	382.8	5.332-3	1795.	34.95
1.639	85.089	4478	1528.	3.990	383.0	5.328-3	1796.	34.96
1.638	85.091	4478	1530.	3.990	383.2	5.314-3	1797.	34.97
1.638	85.092	4478	1530.	3.990	383.5	5.314-3	1798.	34.98

TABLE I.- VALUES FOR RATIOS OF

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\nu$	$M_2$	$p_2/p_1$	$p_{2,0}/p_1$	$T_2/T_1$	$p_{t,2}/p_{t,1}$	$p_{t,2}/p_1$	$M$
1.637	85.004	4478	1531.	3.990	383.7	5309.-3	1800.	35.00
1.636	85.005	4478	1532.	3.990	384.3	5305.-3	1802.	35.01
1.636	85.006	4478	1533.	3.990	384.6	5306.-3	1803.	35.03
1.635	85.008	4478	1534.	3.990	384.8	5307.-3	1804.	35.04
1.635	85.009	4478	1535.	3.990	385.0	5308.-3	1805.	35.05
1.634	85.010	4478	1536.	3.990	385.2	5309.-3	1806.	35.06
1.634	85.010	4478	1537.	3.990	385.4	5310.-3	1807.	35.07
1.634	85.010	4478	1538.	3.990	385.7	5311.-3	1808.	35.08
1.633	85.010	4478	1539.	3.990	386.7	5312.-3	1809.	35.09
1.633	85.108	4478	1540.	3.990	385.9	5264.-3	1810.	35.10
1.632	85.109	4478	1541.	3.990	386.1	5265.-3	1811.	35.11
1.632	85.110	4478	1542.	3.990	386.3	5266.-3	1812.	35.12
1.631	85.112	4478	1543.	3.990	386.5	5267.-3	1813.	35.13
1.630	85.113	4478	1544.	3.990	386.7	5268.-3	1814.	35.14
1.630	85.115	4478	1545.	3.990	386.9	5269.-3	1815.	35.15
1.629	85.116	4478	1546.	3.990	387.0	5270.-3	1816.	35.16
1.629	85.117	4478	1547.	3.990	387.2	5271.-3	1817.	35.17
1.629	85.119	4478	1548.	3.990	387.6	5272.-3	1818.	35.18
1.628	85.120	4478	1549.	3.990	387.9	5273.-3	1819.	35.19
1.628	85.121	4478	1550.	3.990	388.1	5274.-3	1820.	35.20
1.627	85.123	4478	1551.	3.990	388.3	5275.-3	1821.	35.21
1.627	85.124	4478	1552.	3.990	388.5	5276.-3	1822.	35.22
1.626	85.126	4478	1553.	3.990	388.7	5277.-3	1823.	35.23
1.625	85.127	4478	1554.	3.990	388.9	5278.-3	1824.	35.24
1.625	85.128	4478	1555.	3.990	389.4	5110.-3	1825.	35.25
1.625	85.129	4478	1556.	3.990	389.6	5110.-3	1826.	35.26
1.624	85.130	4478	1557.	3.990	389.9	5110.-3	1827.	35.27
1.624	85.131	4478	1558.	3.990	390.1	5110.-3	1828.	35.28
1.624	85.132	4478	1559.	3.990	390.3	5110.-3	1829.	35.29
1.621	85.141	4478	1561.	3.990	391.8	5116.-3	1833.	35.33
1.621	85.142	4478	1562.	3.990	391.4	5118.-3	1834.	35.34
1.621	85.143	4478	1563.	3.990	391.6	5118.-3	1835.	35.35
1.620	85.145	4478	1564.	3.990	391.8	5118.-3	1836.	35.36
1.619	85.146	4478	1565.	3.990	392.0	5118.-3	1837.	35.37
1.619	85.148	4478	1566.	3.990	392.3	5118.-3	1838.	35.38
1.619	85.149	4478	1567.	3.990	392.5	5118.-3	1839.	35.39
1.618	85.150	4478	1568.	3.990	392.7	5118.-3	1840.	35.40
1.617	85.152	4478	1569.	3.990	392.9	5118.-3	1841.	35.41
1.617	85.153	4478	1570.	3.990	393.2	5118.-3	1842.	35.42
1.616	85.154	4478	1571.	3.990	393.5	5118.-3	1843.	35.43
1.616	85.156	4478	1572.	3.990	393.6	5118.-3	1844.	35.44
1.616	85.157	4478	1573.	3.990	393.8	5118.-3	1845.	35.45
1.615	85.160	4478	1574.	3.990	394.0	5118.-3	1846.	35.46
1.614	85.163	4478	1575.	3.991	394.4	5089.-3	1852.	35.50
1.614	85.164	4478	1576.	3.991	394.9	5088.-3	1853.	35.51
1.613	85.165	4478	1577.	3.991	395.1	5088.-3	1854.	35.52
1.612	85.167	4478	1578.	3.991	395.4	5078.-3	1855.	35.53
1.612	85.168	4478	1579.	3.991	395.6	5066.-3	1856.	35.54
1.612	85.169	4478	1580.	3.991	395.8	5065.-3	1857.	35.55
1.611	85.171	4478	1581.	3.991	396.0	5065.-3	1858.	35.56
1.611	85.173	4478	1582.	3.991	396.5	5055.-3	1859.	35.57
1.610	85.175	4478	1583.	3.991	396.7	5055.-3	1860.	35.58
1.610	85.176	4478	1584.	3.991	397.1	5046.-3	1861.	35.59
1.609	85.177	4478	1585.	3.991	397.4	5046.-3	1862.	35.60
1.609	85.179	4478	1586.	3.991	397.6	5036.-3	1863.	35.61
1.608	85.180	4478	1587.	3.991	397.8	5029.-3	1864.	35.62
1.607	85.183	4478	1588.	3.991	398.0	5025.-3	1865.	35.63
1.607	85.184	4478	1589.	3.991	398.3	5021.-3	1866.	35.64
1.606	85.186	4478	1590.	3.991	398.5	5017.-3	1867.	35.65
1.606	85.187	4478	1591.	3.991	398.7	5013.-3	1868.	35.66
1.606	85.188	4478	1592.	3.991	398.9	5008.-3	1869.	35.67
1.605	85.190	4478	1593.	3.991	399.2	5004.-3	1872.	35.70
1.605	85.191	4478	1594.	3.991	399.4	5000.-3	1874.	35.71
1.604	85.192	4478	1595.	3.991	399.6	4996.-3	1875.	35.72
1.604	85.194	4478	1596.	3.991	399.8	4992.-3	1876.	35.73
1.603	85.195	4478	1597.	3.991	400.0	4987.-3	1877.	35.74
1.603	85.196	4478	1598.	3.991	400.3	4983.-3	1878.	35.75
1.602	85.198	4478	1599.	3.991	400.7	4975.-3	1879.	35.76
1.602	85.200	4478	1600.	3.991	400.9	4973.-3	1880.	35.77
1.601	85.203	4478	1601.	3.991	401.2	4967.-3	1882.	35.79
1.600	85.204	4478	1602.	3.991	401.4	4962.-3	1883.	35.80
1.599	85.206	4478	1604.	3.991	401.6	4958.-3	1884.	35.81
1.599	85.207	4478	1605.	3.991	401.8	4954.-3	1885.	35.82
1.598	85.208	4478	1606.	3.991	402.1	4950.-3	1887.	35.83
1.598	85.210	4478	1607.	3.991	402.5	4942.-3	1888.	35.84
1.597	85.211	4478	1608.	3.991	402.7	4938.-3	1889.	35.85
1.597	85.212	4478	1609.	3.991	403.0	4934.-3	1890.	35.86
1.597	85.214	4478	1610.	3.991	403.4	4929.-3	1891.	35.87
1.596	85.215	4478	1611.	3.991	403.6	4921.-3	1892.	35.88
1.595	85.216	4478	1612.	3.991	404.1	4913.-3	1893.	35.89
1.595	85.220	4478	1613.	3.991	404.3	4905.-3	1894.	35.90
1.594	85.223	4478	1614.	3.991	404.5	4903.-3	1895.	35.91
1.594	85.224	4478	1615.	3.991	404.8	4903.-3	1896.	35.92
1.593	85.226	4478	1616.	3.991	405.0	4897.-3	1897.	35.93
1.593	85.227	4478	1617.	3.991	405.4	4893.-3	1898.	35.94
1.593	85.228	4478	1618.	3.991	405.6	4889.-3	1899.	35.95
1.593	85.229	4478	1619.	3.991	405.6	4888.-3	1900.	35.96

TABLE I.- VALUES FOR RATIOS OF

M	p/p <sub>t</sub>	p/p <sub>t</sub>	T/T <sub>t</sub>	a/a <sub>t</sub>	q/p <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/v <sup>*</sup>
36.00	.2563-6	.1110-3	.2309-2	.4806-1	.2768-3	.3414-3	.9988	1.99769
36.01	.2556-6	.1109-3	.2308-2	.4805-1	.2766-3	.3408-3	.9988	1.99769
36.02	.2555-6	.1108-3	.2307-2	.4804-1	.2764-3	.3405-3	.9988	1.99769
36.03	.2555-6	.1107-3	.2306-2	.4803-1	.2762-3	.3402-3	.9988	1.99769
36.04	.2555-6	.1106-3	.2305-2	.4802-1	.2760-3	.3400-3	.9988	1.99770
36.05	.2554-6	.1105-3	.2304-2	.4799-1	.2758-3	.3398-3	.9988	1.99770
36.06	.2554-6	.1104-3	.2303-2	.4798-1	.2756-3	.3397-3	.9988	1.99770
36.07	.2553-6	.1103-3	.2302-2	.4797-1	.2754-3	.3396-3	.9988	1.99770
36.08	.2553-6	.1103-3	.2301-2	.4796-1	.2752-3	.3395-3	.9988	1.99770
36.09	.2552-1-6	.1102-3	.2300-2	.4795-1	.2750-3	.3394-3	.9988	1.99770
36.10	.2552-1-6	.1102-3	.2299-2	.4794-1	.2748-3	.3393-3	.9988	1.99770
36.11	.2552-6	.1101-3	.2298-2	.4793-1	.2746-3	.3392-3	.9988	1.99770
36.12	.2552-6	.1101-3	.2297-2	.4792-1	.2744-3	.3391-3	.9988	1.99770
36.13	.2551-6	.1100-3	.2296-2	.4791-1	.2742-3	.3390-3	.9988	1.99770
36.14	.2551-6	.1099-3	.2295-2	.4790-1	.2740-3	.3389-3	.9988	1.99771
36.15	.2551-6	.1098-3	.2294-2	.4789-1	.2738-3	.3388-3	.9988	1.99771
36.16	.2551-6	.1097-3	.2293-2	.4788-1	.2736-3	.3387-3	.9988	1.99771
36.17	.2550-6	.1096-3	.2292-2	.4787-1	.2734-3	.3386-3	.9988	1.99771
36.18	.2550-6	.1095-3	.2291-2	.4786-1	.2732-3	.3385-3	.9988	1.99771
36.19	.2549-6	.1094-3	.2290-2	.4785-1	.2730-3	.3384-3	.9988	1.99771
36.20	.2493-6	.1092-3	.2284-2	.4779-1	.2723-3	.3357-3	.9989	1.99771
36.21	.2490-6	.1091-3	.2283-2	.4778-1	.2722-3	.3356-3	.9989	1.99772
36.22	.2486-6	.1090-3	.2282-2	.4777-1	.2721-3	.3355-3	.9989	1.99772
36.23	.2485-6	.1089-3	.2281-2	.4776-1	.2720-3	.3354-3	.9989	1.99772
36.24	.2485-6	.1088-3	.2280-2	.4775-1	.2719-3	.3353-3	.9989	1.99772
36.25	.2477-6	.1087-3	.2279-2	.4774-1	.2718-3	.3352-3	.9989	1.99772
36.26	.2477-6	.1086-3	.2278-2	.4773-1	.2717-3	.3351-3	.9989	1.99772
36.27	.2466-6	.1085-3	.2277-2	.4772-1	.2716-3	.3350-3	.9989	1.99772
36.28	.2466-6	.1084-3	.2276-2	.4771-1	.2715-3	.3349-3	.9989	1.99772
36.29	.2465-6	.1083-3	.2275-2	.4770-1	.2714-3	.3348-3	.9989	1.99772
36.30	.2459-6	.1083-3	.2274-2	.4766-1	.2700-3	.3340-3	.9989	1.99773
36.31	.2456-6	.1082-3	.2273-2	.4765-1	.2698-3	.3339-3	.9989	1.99773
36.32	.2449-6	.1081-3	.2272-2	.4764-1	.2696-3	.3338-3	.9989	1.99773
36.33	.2446-6	.1080-3	.2271-2	.4763-1	.2694-3	.3337-3	.9989	1.99773
36.34	.2446-6	.1079-3	.2270-2	.4762-1	.2693-3	.3336-3	.9989	1.99773
36.35	.2446-6	.1078-3	.2269-2	.4761-1	.2692-3	.3335-3	.9989	1.99773
36.36	.2436-6	.1077-3	.2268-2	.4760-1	.2691-3	.3334-3	.9989	1.99773
36.37	.2436-6	.1076-3	.2267-2	.4759-1	.2690-3	.3333-3	.9989	1.99773
36.38	.2436-6	.1075-3	.2266-2	.4758-1	.2689-3	.3332-3	.9989	1.99773
36.39	.2436-6	.1074-3	.2265-2	.4757-1	.2688-3	.3331-3	.9989	1.99773
36.40	.2426-6	.1074-3	.2264-2	.4755-1	.2687-3	.3330-3	.9989	1.99774
36.41	.2426-6	.1073-3	.2263-2	.4754-1	.2686-3	.3329-3	.9989	1.99774
36.42	.2419-6	.1072-3	.2262-2	.4753-1	.2685-3	.3328-3	.9989	1.99774
36.43	.2419-6	.1071-3	.2261-2	.4752-1	.2684-3	.3327-3	.9989	1.99774
36.44	.2419-6	.1070-3	.2260-2	.4751-1	.2683-3	.3326-3	.9989	1.99774
36.45	.2409-6	.1069-3	.2259-2	.4749-1	.2682-3	.3325-3	.9989	1.99775
36.46	.2406-6	.1068-3	.2258-2	.4748-1	.2681-3	.3324-3	.9989	1.99775
36.47	.2403-6	.1068-3	.2257-2	.4747-1	.2680-3	.3323-3	.9989	1.99775
36.48	.2399-6	.1067-3	.2256-2	.4746-1	.2679-3	.3322-3	.9989	1.99775
36.49	.2399-6	.1066-3	.2255-2	.4745-1	.2678-3	.3321-3	.9989	1.99775
36.50	.2393-6	.1065-3	.2247-2	.4753-1	.2676-3	.3320-3	.9989	1.99775
36.51	.2389-6	.1064-3	.2246-2	.4752-1	.2675-3	.3319-3	.9989	1.99775
36.52	.2383-6	.1063-3	.2245-2	.4751-1	.2674-3	.3318-3	.9989	1.99775
36.53	.2380-6	.1062-3	.2244-2	.4750-1	.2673-3	.3317-3	.9989	1.99775
36.54	.2379-6	.1061-3	.2243-2	.4749-1	.2672-3	.3316-3	.9989	1.99775
36.55	.2377-6	.1060-3	.2242-2	.4748-1	.2671-3	.3315-3	.9989	1.99775
36.56	.2377-6	.1059-3	.2241-2	.4747-1	.2670-3	.3314-3	.9989	1.99775
36.57	.2370-6	.1058-3	.2240-2	.4746-1	.2669-3	.3313-3	.9989	1.99775
36.58	.2364-6	.1057-3	.2239-2	.4745-1	.2668-3	.3312-3	.9989	1.99775
36.59	.2364-6	.1056-3	.2238-2	.4744-1	.2667-3	.3311-3	.9989	1.99775
36.60	.2350-6	.1055-3	.2237-2	.4743-1	.2666-3	.3310-3	.9989	1.99776
36.61	.2350-6	.1054-3	.2236-2	.4742-1	.2665-3	.3309-3	.9989	1.99776
36.62	.2350-6	.1053-3	.2235-2	.4741-1	.2664-3	.3308-3	.9989	1.99776
36.63	.2347-6	.1052-3	.2234-2	.4740-1	.2663-3	.3307-3	.9989	1.99776
36.64	.2347-6	.1051-3	.2233-2	.4739-1	.2662-3	.3306-3	.9989	1.99776
36.65	.2344-6	.1050-3	.2232-2	.4738-1	.2661-3	.3305-3	.9989	1.99776
36.66	.2344-6	.1049-3	.2231-2	.4737-1	.2660-3	.3304-3	.9989	1.99776
36.67	.2341-6	.1048-3	.2230-2	.4736-1	.2659-3	.3303-3	.9989	1.99776
36.68	.2341-6	.1047-3	.2229-2	.4735-1	.2658-3	.3302-3	.9989	1.99776
36.69	.2338-6	.1046-3	.2228-2	.4734-1	.2657-3	.3301-3	.9989	1.99776
36.70	.2328-6	.1045-3	.2227-2	.4733-1	.2656-3	.3300-3	.9989	1.99776
36.71	.2325-6	.1047-3	.2226-2	.4713-1	.2653-3	.3297-3	.9989	1.99776
36.72	.2322-6	.1046-3	.2225-2	.4712-1	.2652-3	.3296-3	.9989	1.99776
36.73	.2319-6	.1045-3	.2224-2	.4711-1	.2650-3	.3295-3	.9989	1.99776
36.74	.2316-6	.1044-3	.2223-2	.4710-1	.2649-3	.3294-3	.9989	1.99776
36.75	.2316-6	.1043-3	.2222-2	.4709-1	.2648-3	.3293-3	.9989	1.99776
36.76	.2316-6	.1042-3	.2221-2	.4708-1	.2647-3	.3292-3	.9989	1.99776
36.77	.2306-6	.1041-3	.2220-2	.4707-1	.2646-3	.3291-3	.9989	1.99776
36.78	.2303-6	.1041-3	.2219-2	.4704-1	.2645-3	.3290-3	.9989	1.99776
36.79	.2300-6	.1040-3	.2218-2	.4703-1	.2644-3	.3289-3	.9989	1.99776
36.80	.2297-6	.1039-3	.2210-2	.4701-1	.2642-3	.3286-3	.9989	1.99776
36.81	.2294-6	.1038-3	.2209-2	.4700-1	.2641-3	.3285-3	.9989	1.99776
36.82	.2291-6	.1037-3	.2208-2	.4699-1	.2640-3	.3284-3	.9989	1.99776
36.83	.2288-6	.1036-3	.2207-2	.4698-1	.2639-3	.3283-3	.9989	1.99776
36.84	.2284-6	.1035-3	.2206-2	.4696-1	.2638-3	.3282-3	.9989	1.99776
36.85	.2284-6	.1034-3	.2205-2	.4695-1	.2637-3	.3281-3	.9989	1.99776
36.86	.2278-6	.1034-3	.2203-2	.4694-1	.2636-3	.3280-3	.9989	1.99776
36.87	.2275-6	.1033-3	.2202-2	.4693-1	.2635-3	.3279-3	.9989	1.99776
36.88	.2272-6	.1032-3	.2201-2	.4691-1	.2634-3	.3278-3	.9989	1.99776
36.89	.2269-6	.1032-3	.2200-2	.4690-1	.2633-3	.3277-3	.9989	1.99776
36.90	.2266-6	.1031-3	.2198-2	.4689-1	.2631-3	.3276-3	.9989	1.99780
36.91	.2265-6	.1030-3	.2197-2	.4688-1	.2630-3	.3275-3	.9989	1.99780
36.92	.2260-6	.1029-3	.2196-2	.4686-1	.2629-3	.3274-3	.9989	1.99780
36.93	.2257-6	.1028-3	.2195-2	.4685-1	.2628-3	.3273-3	.9989	1.99780
36.94	.2254-6	.1027-3	.2194-2	.4684-1	.2627-3	.3272-3	.9989	1.99781
36.95	.2251-6	.1027-3	.2192-2	.4683-1	.2626-3	.3271-3	.9989	1.99781
36.96	.2248-6	.1026-3	.2191-2	.4681-1	.2625-3	.3270-3	.9989	1.99781
36.97	.2245-6	.1025-3	.2190-2	.4680-1	.2624-3	.3269-3	.9989	1.99781
36.98	.2242-6	.1024-3	.2189-2	.4679-1	.2623-3	.3268-3	.9989	1.99781
36.99	.2239-6	.1023-3	.2188-2	.4677-1	.2622-3	.3267-3	.9989	1.99781

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_2$	$P_2/P_1$	$P_{t,2}/P_1$	$T_{t,2}/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
1.592	85.230	.4476	1620.	3.991	405.9	-4881-3	1904.	36.00
1.591	85.231	.4476	1621.	3.991	406.1	-4876-3	1905.	36.01
1.590	85.232	.4476	1622.	3.991	406.6	-4868-3	1906.	36.02
1.590	85.233	.4476	1623.	3.991	406.0	-4860-3	1907.	36.03
1.589	85.234	.4476	1624.	3.991	407.3	-4852-3	1908.	36.04
1.589	85.235	.4476	1625.	3.991	407.5	-4852-3	1909.	36.05
1.588	85.236	.4476	1626.	3.991	407.7	-4848-3	1910.	36.06
1.588	85.237	.4476	1627.	3.991	407.9	-4844-3	1911.	36.07
1.588	85.238	.4476	1628.	3.991	407.9	-4844-3	1912.	36.08
1.587	85.244	.4476	1629.	3.991	408.1	-4840-3	1915.	36.10
1.587	85.244	.4476	1630.	3.991	408.4	-4836-3	1916.	36.11
1.586	85.244	.4476	1631.	3.991	408.8	-4830-3	1917.	36.12
1.586	85.244	.4476	1632.	3.991	409.0	-4824-3	1918.	36.13
1.585	85.244	.4476	1633.	3.991	409.3	-4820-3	1919.	36.14
1.585	85.244	.4476	1634.	3.991	409.5	-4816-3	1920.	36.15
1.584	85.245	.4476	1635.	3.991	409.7	-4812-3	1921.	36.16
1.584	85.245	.4476	1636.	3.991	409.9	-4808-3	1922.	36.17
1.583	85.245	.4476	1637.	3.991	410.2	-4804-3	1923.	36.18
1.583	85.245	.4476	1638.	3.991	410.6	-4800-3	1924.	36.19
1.583	85.245	.4476	1639.	3.991	410.8	-4792-3	1925.	36.20
1.583	85.245	.4476	1640.	3.991	411.1	-4789-3	1926.	36.21
1.581	85.246	.4476	1641.	3.991	411.3	-4785-3	1927.	36.22
1.581	85.246	.4476	1641.	3.991	411.5	-4781-3	1928.	36.23
1.580	85.246	.4476	1642.	3.991	411.7	-4777-3	1929.	36.24
1.579	85.246	.4476	1644.	3.991	412.0	-4773-3	1930.	36.25
1.579	85.246	.4476	1645.	3.991	412.2	-4769-3	1931.	36.26
1.579	85.246	.4476	1646.	3.991	412.4	-4765-3	1932.	36.27
1.579	85.246	.4476	1647.	3.991	412.7	-4761-3	1933.	36.28
1.579	85.246	.4476	1648.	3.991	412.9	-4757-3	1934.	36.29
1.578	85.272	.4476	1649.	3.991	413.1	-4753-3	1935.	36.30
1.577	85.273	.4476	1650.	3.991	413.3	-4749-3	1936.	36.31
1.577	85.273	.4476	1651.	3.991	413.6	-4745-3	1937.	36.32
1.576	85.275	.4476	1651.	3.991	413.8	-4741-3	1938.	36.33
1.576	85.275	.4476	1652.	3.991	414.0	-4738-3	1939.	36.34
1.576	85.275	.4476	1653.	3.991	414.2	-4734-3	1940.	36.35
1.575	85.279	.4476	1654.	3.991	414.5	-4730-3	1941.	36.36
1.575	85.281	.4476	1655.	3.991	414.7	-4726-3	1942.	36.37
1.574	85.282	.4476	1656.	3.991	414.9	-4722-3	1943.	36.38
1.574	85.283	.4476	1657.	3.991	415.2	-4718-3	1944.	36.39
1.573	85.286	.4476	1658.	3.991	415.4	-4714-3	1945.	36.40
1.573	85.286	.4476	1659.	3.991	415.6	-4710-3	1946.	36.41
1.572	85.287	.4476	1660.	3.991	415.8	-4706-3	1947.	36.42
1.572	85.288	.4476	1661.	3.991	416.1	-4702-3	1948.	36.43
1.571	85.290	.4476	1662.	3.991	416.5	-4698-3	1949.	36.44
1.571	85.292	.4476	1663.	3.991	416.7	-4694-3	1950.	36.45
1.570	85.294	.4476	1664.	3.991	417.0	-4687-3	1951.	36.46
1.570	85.295	.4476	1665.	3.991	417.2	-4683-3	1952.	36.47
1.569	85.296	.4477	1666.	3.991	417.4	-4678-3	1953.	36.48
1.569	85.297	.4477	1667.	3.991	417.7	-4674-3	1954.	36.49
1.568	85.300	.4477	1668.	3.991	417.9	-4670-3	1955.	36.50
1.567	85.301	.4477	1669.	3.991	418.1	-4666-3	1956.	36.51
1.567	85.301	.4477	1670.	3.991	418.3	-4662-3	1957.	36.52
1.567	85.304	.4477	1671.	3.991	418.6	-4660-3	1958.	36.53
1.567	85.305	.4477	1672.	3.991	418.8	-4657-3	1959.	36.54
1.566	85.306	.4477	1673.	3.991	419.0	-4653-3	1960.	36.55
1.566	85.308	.4477	1674.	3.991	419.3	-4649-3	1961.	36.56
1.565	85.309	.4477	1675.	3.991	419.5	-4645-3	1962.	36.57
1.565	85.310	.4477	1676.	3.991	419.7	-4641-3	1963.	36.58
1.564	85.312	.4477	1677.	3.991	420.0	-4637-3	1964.	36.59
1.564	85.314	.4477	1678.	3.991	420.4	-4633-3	1965.	36.60
1.563	85.315	.4477	1679.	3.991	420.6	-4629-3	1966.	36.61
1.562	85.316	.4477	1680.	3.991	420.9	-4625-3	1967.	36.62
1.562	85.316	.4477	1681.	3.991	421.1	-4621-3	1968.	36.63
1.561	85.320	.4477	1682.	3.991	421.3	-4617-3	1969.	36.64
1.561	85.323	.4477	1683.	3.991	421.5	-4613-3	1970.	36.65
1.560	85.324	.4477	1684.	3.991	421.8	-4609-3	1971.	36.66
1.559	85.326	.4477	1685.	3.991	422.0	-4605-3	1972.	36.67
1.559	85.327	.4477	1686.	3.991	422.3	-4598-3	1973.	36.68
1.558	85.328	.4477	1687.	3.991	422.5	-4594-3	1974.	36.69
1.558	85.329	.4477	1688.	3.991	422.8	-4589-3	1975.	36.70
1.558	85.331	.4477	1689.	3.991	423.0	-4585-3	1976.	36.71
1.557	85.332	.4477	1690.	3.991	423.4	-4581-3	1977.	36.72
1.557	85.332	.4477	1691.	3.991	423.6	-4578-3	1978.	36.73
1.557	85.332	.4477	1692.	3.991	423.8	-4574-3	1979.	36.74
1.556	85.334	.4477	1693.	3.991	424.1	-4570-3	1980.	36.75
1.556	85.334	.4477	1694.	3.991	424.4	-4566-3	1981.	36.76
1.555	85.335	.4477	1695.	3.991	424.8	-4562-3	1982.	36.77
1.555	85.335	.4477	1696.	3.991	425.5	-4558-3	1983.	36.78
1.555	85.335	.4477	1697.	3.991	425.7	-4554-3	1984.	36.79
1.554	85.336	.4477	1698.	3.991	426.2	-4550-3	1985.	36.80
1.554	85.336	.4477	1699.	3.991	426.4	-4546-3	1986.	36.81
1.553	85.337	.4477	1700.	3.991	426.8	-4542-3	1987.	36.82
1.553	85.337	.4477	1701.	3.991	427.1	-4537-3	1988.	36.83
1.553	85.346	.4477	1702.	3.991	426.4	-4533-3	1989.	36.84
1.553	85.346	.4477	1703.	3.991	426.6	-4530-3	1990.	36.85
1.552	85.346	.4477	1704.	3.991	426.9	-4526-3	1991.	36.86
1.552	85.346	.4477	1705.	3.991	427.1	-4522-3	1992.	36.87
1.551	85.347	.4477	1706.	3.991	427.5	-4518-3	1993.	36.88
1.551	85.347	.4477	1707.	3.991	427.6	-4514-3	1994.	36.89
1.550	85.348	.4477	1708.	3.991	427.8	-4511-3	1995.	36.90
1.550	85.348	.4477	1709.	3.991	428.0	-4507-3	1996.	36.91
1.549	85.357	.4477	1710.	3.991	428.5	-4500-3	1997.	36.92

TABLE I.- VALUES FOR RATIOS OF

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$v$	$M_3$	$P_3/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,3}/P_1$	$M$
1.549	85.356	4477	1711.	3.991	426.7	.4497-3	2011.	37.00
1.546	85.360	4477	1712.	3.991	428.9	.4499-3	2012.	37.01
1.545	85.362	4477	1713.	3.991	429.1	.4489-3	2013.	37.02
1.547	85.363	4477	1714.	3.991	429.4	.4486-3	2014.	37.03
1.547	85.365	4477	1715.	3.991	429.6	.4488-3	2015.	37.04
1.546	85.366	4477	1716.	3.991	429.8	.4479-3	2016.	37.05
1.546	85.367	4477	1717.	3.991	430.1	.4475-3	2017.	37.06
1.545	85.368	4477	1718.	3.991	430.3	.4471-3	2018.	37.07
1.545	85.370	4477	1719.	3.991	430.6	.4468-3	2019.	37.08
1.545	85.371	4477	1720.	3.991	431.0	.4464-3	2020.	37.09
1.544	85.372	4477	1721.	3.991	431.5	.4467-3	2021.	37.10
1.543	85.373	4477	1722.	3.991	431.7	.4453-3	2022.	37.11
1.543	85.375	4477	1723.	3.991	431.9	.4450-3	2023.	37.12
1.543	85.376	4477	1724.	3.991	432.0	.4446-3	2024.	37.13
1.543	85.377	4477	1725.	3.991	432.2	.4443-3	2025.	37.14
1.542	85.378	4477	1726.	3.991	432.4	.4439-3	2026.	37.15
1.542	85.380	4477	1727.	3.991	432.6	.4436-3	2027.	37.16
1.541	85.381	4477	1728.	3.991	432.9	.4432-3	2028.	37.17
1.541	85.382	4477	1729.	3.991	433.1	.4428-3	2029.	37.18
1.540	85.383	4477	1730.	3.991	433.3	.4425-3	2030.	37.19
1.540	85.385	4477	1730.	3.991	433.5	.4421-3	2031.	37.20
1.539	85.386	4477	1731.	3.991	433.8	.4418-3	2032.	37.21
1.539	85.387	4477	1732.	3.991	434.0	.4414-3	2033.	37.22
1.538	85.388	4477	1733.	3.991	434.3	.4411-3	2034.	37.23
1.538	85.389	4477	1734.	3.991	434.5	.4407-3	2035.	37.24
1.538	85.391	4477	1735.	3.991	434.7	.4404-3	2036.	37.25
1.538	85.392	4477	1736.	3.991	435.0	.4400-3	2037.	37.26
1.537	85.393	4477	1737.	3.991	435.2	.4397-3	2038.	37.27
1.537	85.394	4477	1738.	3.991	435.4	.4393-3	2039.	37.28
1.536	85.396	4477	1739.	3.991	435.7	.4389-3	2040.	37.29
1.535	85.397	4477	1740.	3.991	435.9	.4386-3	2041.	37.30
1.535	85.398	4477	1741.	3.991	436.1	.4382-3	2042.	37.31
1.535	85.399	4477	1742.	3.991	436.4	.4379-3	2043.	37.32
1.535	85.401	4477	1743.	3.991	436.6	.4375-3	2044.	37.33
1.534	85.402	4477	1744.	3.991	436.8	.4372-3	2045.	37.34
1.534	85.403	4477	1745.	3.991	437.1	.4368-3	2046.	37.35
1.533	85.404	4477	1746.	3.991	437.4	.4365-3	2047.	37.36
1.533	85.405	4477	1747.	3.991	437.6	.4361-3	2048.	37.37
1.533	85.407	4477	1747.	3.991	437.8	.4358-3	2049.	37.38
1.532	85.408	4477	1748.	3.991	438.0	.4354-3	2050.	37.40
1.532	85.409	4477	1749.	3.991	438.2	.4351-3	2051.	37.41
1.531	85.410	4477	1750.	3.991	438.5	.4348-3	2052.	37.42
1.531	85.411	4477	1751.	3.991	438.7	.4345-3	2053.	37.43
1.531	85.412	4477	1752.	3.991	438.9	.4342-3	2054.	37.44
1.530	85.413	4477	1753.	3.991	439.2	.4337-3	2055.	37.45
1.530	85.414	4477	1753.	3.991	439.4	.4334-3	2056.	37.46
1.530	85.415	4477	1754.	3.991	439.6	.4330-3	2057.	37.47
1.529	85.416	4477	1755.	3.991	439.8	.4327-3	2058.	37.48
1.529	85.418	4477	1756.	3.991	440.1	.4323-3	2059.	37.49
1.528	85.419	4477	1757.	3.991	440.3	.4320-3	2060.	37.50
1.528	85.420	4477	1758.	3.991	440.6	.4316-3	2061.	37.51
1.527	85.421	4477	1759.	3.991	440.8	.4313-3	2062.	37.52
1.527	85.423	4477	1760.	3.991	441.0	.4310-3	2063.	37.53
1.526	85.424	4477	1761.	3.992	441.3	.4306-3	2064.	37.54
1.526	85.425	4477	1762.	3.992	441.5	.4303-3	2065.	37.55
1.526	85.426	4477	1763.	3.992	441.7	.4299-3	2066.	37.56
1.525	85.427	4477	1764.	3.992	442.0	.4296-3	2067.	37.57
1.525	85.430	4477	1765.	3.992	442.2	.4292-3	2068.	37.58
1.525	85.431	4477	1766.	3.992	442.4	.4289-3	2069.	37.59
1.524	85.432	4477	1767.	3.992	442.7	.4286-3	2070.	37.60
1.524	85.434	4477	1768.	3.992	442.9	.4282-3	2071.	37.61
1.523	85.435	4477	1769.	3.992	443.1	.4279-3	2072.	37.62
1.523	85.436	4477	1770.	3.992	443.4	.4275-3	2073.	37.63
1.523	85.437	4477	1771.	3.992	443.6	.4272-3	2074.	37.64
1.522	85.438	4477	1772.	3.992	443.9	.4269-3	2075.	37.65
1.522	85.440	4477	1773.	3.992	444.1	.4266-3	2076.	37.66
1.521	85.442	4477	1774.	3.992	444.3	.4263-3	2077.	37.67
1.520	85.443	4477	1775.	3.992	444.6	.4258-3	2078.	37.68
1.520	85.444	4477	1776.	3.992	444.8	.4255-3	2079.	37.69
1.519	85.445	4477	1777.	3.992	445.0	.4252-3	2080.	37.70
1.519	85.446	4477	1778.	3.992	445.3	.4249-3	2081.	37.71
1.518	85.447	4477	1779.	3.992	445.5	.4246-3	2082.	37.72
1.518	85.449	4477	1780.	3.992	446.0	.4243-3	2083.	37.73
1.518	85.450	4477	1781.	3.992	446.2	.4240-3	2084.	37.74
1.517	85.452	4477	1782.	3.992	446.4	.4237-3	2085.	37.75
1.517	85.453	4477	1783.	3.992	446.7	.4234-3	2086.	37.76
1.517	85.454	4477	1784.	3.992	446.9	.4231-3	2087.	37.77
1.516	85.455	4477	1785.	3.992	447.2	.4228-3	2088.	37.78
1.516	85.456	4477	1786.	3.992	447.4	.4218-3	2089.	37.79
1.515	85.458	4477	1787.	3.992	447.6	.4215-3	2100.	37.81
1.515	85.460	4477	1788.	3.992	447.9	.4212-3	2101.	37.82
1.514	85.461	4477	1789.	3.992	448.1	.4208-3	2102.	37.83
1.514	85.462	4477	1790.	3.992	448.3	.4205-3	2103.	37.84
1.514	85.464	4477	1791.	3.992	448.6	.4202-3	2104.	37.85
1.513	85.465	4477	1792.	3.992	448.8	.4199-3	2105.	37.86
1.513	85.466	4477	1793.	3.992	449.0	.4196-3	2106.	37.87
1.513	85.467	4477	1794.	3.992	449.3	.4193-3	2107.	37.88
1.512	85.468	4477	1795.	3.992	449.6	.4185-3	2108.	37.89
1.512	85.470	4477	1796.	3.992	450.0	.4182-3	2109.	37.91
1.511	85.471	4477	1797.	3.992	450.5	.4178-3	2110.	37.92
1.511	85.472	4477	1798.	3.992	450.5	.4175-3	2111.	37.93
1.511	85.473	4477	1799.	3.992	450.5	.4172-3	2112.	37.94
1.510	85.474	4477	1800.	3.992	450.5	.4169-3	2113.	37.95
1.510	85.475	4477	1801.	3.992	451.2	.4165-3	2114.	37.96
1.509	85.476	4477	1802.	3.992	451.4	.4162-3	2115.	37.97
1.509	85.477	4477	1803.	3.992	451.6	.4159-3	2116.	37.98
1.508	85.478	4477	1804.	3.992	451.9	.4155-3	2117.	37.99

TABLE I.- VALUES FOR RATIOS OF

M	$p/p_t$	$\rho/\rho_t$	$T/T_t$	$a/a_t$	$d/d_t$	$A^*/A$	$V/V_0$	$V/A$
38.00	1.9577-6	.9444-4	2.073-8	.4553-1	.8355-3	.904-3	.9990	1.99793
38.01	1.9555-6	.9443-4	2.072-8	.4555-1	.8355-3	.9990	.9990	1.99793
38.02	1.9533-6	.9442-4	2.071-8	.4556-1	.8355-3	.9990	.9990	1.99793
38.04	1.9447-6	.9416-4	2.069-8	.4554-1	.8346-3	.9990	.9990	1.99793
38.05	1.9444-6	.9403-4	2.068-8	.4554-1	.8346-3	.9990	.9990	1.99793
38.06	1.9442-6	.9396-4	2.067-8	.4554-1	.8346-3	.9990	.9990	1.99793
38.07	1.9439-6	.9388-4	2.066-8	.4554-1	.8346-3	.9990	.9990	1.99793
38.08	1.9437-6	.9381-4	2.065-8	.4554-1	.8346-3	.9990	.9990	1.99793
38.09	1.9434-6	.9374-4	2.064-8	.4554-1	.8346-3	.9990	.9990	1.99793
38.10	1.9329-6	.9366-4	2.061-8	.4541-1	.8237-3	.8851-3	.9990	1.99794
38.11	1.9297-6	.9359-4	2.061-8	.4540-1	.8237-3	.9990	.9990	1.99794
38.13	1.9084-6	.9352-4	2.059-8	.4535-1	.8237-3	.9990	.9990	1.99794
38.14	1.9082-6	.9353-4	2.058-8	.4535-1	.8237-3	.9990	.9990	1.99794
38.15	1.9071-6	.9352-4	2.058-8	.4535-1	.8237-3	.9990	.9990	1.99794
38.16	1.9069-6	.9352-4	2.058-8	.4535-1	.8237-3	.9990	.9990	1.99794
38.17	1.9061-6	.9351-4	2.058-8	.4535-1	.8237-3	.9990	.9990	1.99794
38.18	1.9052-6	.9351-4	2.058-8	.4535-1	.8237-3	.9990	.9990	1.99794
38.19	1.9049-6	.9350-4	2.058-8	.4535-1	.8237-3	.9990	.9990	1.99794
38.20	1.9047-6	.9293-4	2.058-8	.4530-1	.8231-3	.8851-3	.9990	1.99795
38.21	1.9042-6	.9286-4	2.058-8	.4529-1	.8231-3	.9990	.9990	1.99795
38.23	1.8892-6	.9287-4	2.058-8	.4528-1	.8231-3	.9990	.9990	1.99795
38.24	1.8892-6	.9287-4	2.058-8	.4528-1	.8231-3	.9990	.9990	1.99795
38.25	1.8892-6	.9287-4	2.058-8	.4528-1	.8231-3	.9990	.9990	1.99795
38.26	1.8892-6	.9284-4	2.044-8	.4528-1	.8205-3	.8848-3	.9990	1.99795
38.27	1.8889-6	.9284-4	2.044-8	.4528-1	.8205-3	.9990	.9990	1.99795
38.28	1.8887-6	.9285-4	2.044-8	.4528-1	.8205-3	.9990	.9990	1.99795
38.29	1.8884-6	.9286-4	2.044-8	.4528-1	.8205-3	.9990	.9990	1.99795
38.30	1.8680-6	.9281-4	2.041-8	.4518-1	.8200-3	.8836-3	.9990	1.99795
38.31	1.8677-6	.9280-4	2.040-8	.4515-1	.8200-3	.9990	.9990	1.99795
38.32	1.8677-6	.9279-4	2.040-8	.4515-1	.8200-3	.9990	.9990	1.99795
38.34	1.8772-6	.9198-4	2.035-8	.4513-1	.8200-3	.9990	.9990	1.99795
38.35	1.8770-6	.9185-4	2.035-8	.4513-1	.8200-3	.9990	.9990	1.99795
38.36	1.8667-6	.9177-4	2.035-8	.4510-1	.8200-3	.9990	.9990	1.99795
38.37	1.8665-6	.9170-4	2.034-8	.4509-1	.8200-3	.9990	.9990	1.99795
38.38	1.8662-6	.9163-4	2.034-8	.4508-1	.8200-3	.9990	.9990	1.99795
38.39	1.8660-6	.9156-4	2.034-8	.4507-1	.8200-3	.9990	.9990	1.99795
38.40	1.8588-6	.9149-4	2.030-8	.4506-1	.8200-3	.8836-3	.9990	1.99795
38.42	1.8553-6	.9148-4	2.029-8	.4505-1	.8200-3	.9990	.9990	1.99795
38.43	1.8553-6	.9127-4	2.029-8	.4504-1	.8200-3	.9990	.9990	1.99795
38.44	1.8448-6	.9120-4	2.026-8	.4503-1	.8200-3	.9990	.9990	1.99795
38.45	1.8446-6	.9113-4	2.025-8	.4503-1	.8200-3	.9990	.9990	1.99795
38.46	1.8441-6	.9099-4	2.025-8	.4499-1	.8200-3	.9990	.9990	1.99795
38.47	1.8441-6	.9099-4	2.025-8	.4499-1	.8200-3	.9990	.9990	1.99795
38.48	1.8336-6	.9088-4	2.020-8	.4495-1	.8200-3	.9990	.9990	1.99795
38.50	1.8334-6	.9078-4	2.020-8	.4494-1	.8200-3	.8828-3	.9990	1.99795
38.51	1.8331-6	.9073-4	2.019-8	.4493-1	.8200-3	.9990	.9990	1.99795
38.52	1.8286-6	.9064-4	2.017-8	.4492-1	.8200-3	.9990	.9990	1.99795
38.53	1.8284-6	.9057-4	2.017-8	.4491-1	.8200-3	.9990	.9990	1.99795
38.55	1.8282-6	.9054-4	2.016-8	.4490-1	.8200-3	.9990	.9990	1.99795
38.56	1.8281-6	.9053-4	2.016-8	.4489-1	.8200-3	.9990	.9990	1.99795
38.57	1.8281-6	.9052-4	2.016-8	.4488-1	.8200-3	.9990	.9990	1.99795
38.58	1.8281-6	.9051-4	2.016-8	.4487-1	.8200-3	.9990	.9990	1.99795
38.59	1.8281-6	.9050-4	2.016-8	.4486-1	.8200-3	.9990	.9990	1.99795
38.60	1.8281-6	.9048-4	2.016-8	.4485-1	.8200-3	.9990	.9990	1.99795
38.61	1.8280-6	.9047-4	2.016-8	.4484-1	.8200-3	.9990	.9990	1.99795
38.62	1.8055-6	.8991-4	2.007-8	.4483-1	.8247-3	.8771-3	.9990	1.99799
38.63	1.8053-6	.8987-4	2.007-8	.4482-1	.8247-3	.9990	.9990	1.99799
38.64	1.8052-6	.8984-4	2.007-8	.4481-1	.8247-3	.9990	.9990	1.99799
38.65	1.7996-6	.8973-4	2.003-8	.4477-1	.8237-3	.9976-3	.9990	1.99799
38.66	1.7994-6	.8973-4	2.003-8	.4476-1	.8237-3	.9990	.9990	1.99799
38.67	1.7994-6	.8959-4	2.003-8	.4475-1	.8237-3	.9990	.9990	1.99799
38.68	1.7991-6	.8958-4	2.001-8	.4475-1	.8237-3	.9990	.9990	1.99799
38.69	1.7989-6	.8945-4	2.000-8	.4474-1	.8237-3	.9990	.9990	1.99799
38.70	1.7878-6	.8938-4	1.999-9	.4471-1	.8230-3	.8749-3	.9990	1.99800
38.71	1.7874-6	.8935-4	1.999-9	.4470-1	.8230-3	.9990	.9990	1.99800
38.72	1.7872-6	.8934-4	1.999-9	.4469-1	.8230-3	.9990	.9990	1.99800
38.73	1.7778-6	.8917-4	1.999-9	.4468-1	.8230-3	.9990	.9990	1.99800
38.74	1.7775-6	.8904-4	1.999-9	.4465-1	.8230-3	.9990	.9990	1.99800
38.75	1.7773-6	.8897-4	1.999-9	.4464-1	.8230-3	.9990	.9990	1.99800
38.76	1.7771-6	.8890-4	1.999-9	.4463-1	.8230-3	.9990	.9990	1.99800
38.77	1.7768-6	.8883-4	1.999-9	.4462-1	.8230-3	.9990	.9990	1.99800
38.78	1.7766-6	.8878-4	1.999-9	.4461-1	.8230-3	.9990	.9990	1.99800
38.79	1.7764-6	.8876-4	1.999-9	.4460-1	.8230-3	.9990	.9990	1.99800
38.80	1.7664-6	.8869-4	1.998-9	.4458-1	.8200-3	.8728-3	.9990	1.99801
38.81	1.7662-6	.8868-4	1.998-9	.4457-1	.8200-3	.9990	.9990	1.99801
38.83	1.7557-6	.8849-4	1.998-9	.4456-1	.8200-3	.9990	.9990	1.99801
38.84	1.7555-6	.8843-4	1.998-9	.4455-1	.8200-3	.9990	.9990	1.99801
38.85	1.7553-6	.8839-4	1.998-9	.4454-1	.8200-3	.9990	.9990	1.99801
38.86	1.7550-6	.8828-4	1.998-9	.4453-1	.8200-3	.9990	.9990	1.99801
38.87	1.7448-6	.8828-4	1.998-9	.4452-1	.8200-3	.9990	.9990	1.99801
38.88	1.7446-6	.8818-4	1.998-9	.4450-1	.8200-3	.9990	.9990	1.99801
38.89	1.7444-6	.8808-4	1.998-9	.4449-1	.8200-3	.9990	.9990	1.99801
38.90	1.7441-6	.8801-4	1.977-9	.4448-1	.8200-3	.8728-3	.9990	1.99802
38.91	1.7339-6	.8794-4	1.977-9	.4447-1	.8200-3	.9990	.9990	1.99802
38.93	1.7337-6	.8788-4	1.977-9	.4446-1	.8200-3	.9990	.9990	1.99802
38.94	1.7333-6	.8777-4	1.977-9	.4445-1	.8200-3	.9990	.9990	1.99802
38.95	1.7330-6	.8774-4	1.977-9	.4444-1	.8200-3	.9990	.9990	1.99802
38.96	1.7328-6	.8771-4	1.977-9	.4443-1	.8200-3	.9990	.9990	1.99802
38.97	1.7324-6	.8774-4	1.977-9	.4442-1	.8200-3	.9990	.9990	1.99802
38.98	1.7324-6	.8774-4	1.977-9	.4441-1	.8200-3	.9990	.9990	1.99802
38.99	1.7321-6	.8774-4	1.977-9	.4439-1	.8200-3	.9990	.9990	1.99802

## FUNDAMENTAL FLOW EQUATIONS

$M$	$v$	$M_2$	$P_2/P_1$	$P_2/P_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
1.508	.85 .480	-4477	1805.	.992	452 .1	.4158 -3	2121.	.38 .00
1.508	.85 .481	-4477	1806.	.992	452 .4	.4149 -3	2123.	.38 .01
1.507	.85 .483	-4477	1807.	.992	452 .6	.4144 -3	2124.	.38 .02
1.506	.85 .484	-4477	1808.	.992	453 .0	.4144 -3	2125.	.38 .03
1.506	.85 .485	-4477	1809.	.992	453 .3	.4149 -3	2126.	.38 .04
1.506	.85 .486	-4477	1810.	.992	453 .7	.4133 -3	2127.	.38 .05
1.505	.85 .487	-4477	1811.	.992	453 .8	.4129 -3	2128.	.38 .06
1.505	.85 .489	-4477	1812.	.992	454 .0	.4126 -3	2129.	.38 .07
1.505	.85 .490	-4477	1813.	.992	454 .3	.4123 -3	2130.	.38 .08
1.504	.85 .491	-4477					2132.	.38 .09
1.504	.85 .493	-4477	1814.	.993	454 .5	.4120 -3	2133.	.38 .10
1.503	.85 .495	-4477	1815.	.993	454 .7	.4116 -3	2134.	.38 .11
1.503	.85 .496	-4477	1816.	.993	455 .0	.4113 -3	2135.	.38 .12
1.502	.85 .497	-4477	1817.	.993	455 .3	.4110 -3	2136.	.38 .13
1.502	.85 .498	-4477	1818.	.993	455 .5	.4107 -3	2137.	.38 .14
1.502	.85 .499	-4477	1819.	.993	455 .7	.4104 -3	2138.	.38 .15
1.501	.85 .500	-4477	1820.	.993	455 .9	.4100 -3	2139.	.38 .16
1.501	.85 .502	-4477	1821.	.993	456 .4	.4097 -3	2141.	.38 .17
1.500	.85 .503	-4477	1822.	.993	456 .6	.4094 -3	2142.	.38 .18
1.500	.85 .503	-4477	1823.	.993	456 .6	.4091 -3	2143.	.38 .19
1.500	.85 .504	-4477						
1.499	.85 .505	-4477	1824.	.992	456 .9	.4087 -3	2144.	.38 .20
1.499	.85 .506	-4477	1825.	.992	457 .1	.4084 -3	2145.	.38 .21
1.499	.85 .507	-4477	1826.	.992	457 .4	.4081 -3	2146.	.38 .22
1.498	.85 .509	-4477	1827.	.992	457 .6	.4078 -3	2147.	.38 .23
1.498	.85 .510	-4477	1828.	.992	457 .8	.4075 -3	2148.	.38 .24
1.498	.85 .510	-4477	1829.	.992	458 .1	.4072 -3	2149.	.38 .25
1.498	.85 .511	-4477	1830.	.992	458 .3	.4068 -3	2151.	.38 .26
1.497	.85 .512	-4477	1830.	.992	458 .6	.4065 -3	2152.	.38 .27
1.497	.85 .513	-4477	1831.	.992	458 .9	.4062 -3	2153.	.38 .28
1.497	.85 .514	-4477	1832.	.992	459 .0	.4059 -3	2154.	.38 .29
1.496	.85 .516	-4477	1833.	.992	459 .4	.4056 -3	2155.	.38 .30
1.496	.85 .517	-4477	1834.	.992	459 .6	.4052 -3	2156.	.38 .31
1.495	.85 .518	-4477	1835.	.992	459 .8	.4049 -3	2157.	.38 .32
1.495	.85 .519	-4477	1836.	.992	460 .0	.4046 -3	2158.	.38 .33
1.494	.85 .520	-4477	1837.	.992	460 .2	.4043 -3	2159.	.38 .34
1.494	.85 .521	-4477	1838.	.992	460 .4	.4040 -3	2160.	.38 .35
1.493	.85 .522	-4477	1839.	.992	460 .7	.4034 -3	2161.	.38 .36
1.493	.85 .523	-4477	1840.	.992	461 .0	.4032 -3	2162.	.38 .37
1.493	.85 .526	-4477	1841.	.992	461 .2	.4030 -3	2163.	.38 .38
1.493	.85 .526	-4477	1842.	.992	461 .4	.4027 -3	2164.	.38 .39
1.492	.85 .527	-4477	1843.	.992	461 .7	.4024 -3	2166.	.38 .40
1.492	.85 .528	-4477	1844.	.992	461 .9	.4021 -3	2167.	.38 .41
1.491	.85 .530	-4477	1845.	.992	462 .2	.4018 -3	2168.	.38 .42
1.491	.85 .531	-4477	1846.	.992	462 .4	.4015 -3	2169.	.38 .43
1.491	.85 .531	-4477	1847.	.992	462 .6	.4012 -3	2170.	.38 .44
1.490	.85 .532	-4477	1848.	.992	462 .9	.4009 -3	2171.	.38 .45
1.490	.85 .534	-4477	1849.	.992	463 .1	.4005 -3	2172.	.38 .46
1.490	.85 .535	-4477	1850.	.992	463 .4	.4002 -3	2173.	.38 .47
1.489	.85 .537	-4477	1851.	.992	463 .6	.3999 -3	2174.	.38 .48
1.489	.85 .538	-4477	1852.	.992	463 .8	.3996 -3	2175.	.38 .49
1.488	.85 .539	-4477	1853.	.992	464 .1	.3993 -3	2176.	.38 .50
1.488	.85 .540	-4477	1854.	.992	464 .3	.3990 -3	2177.	.38 .51
1.487	.85 .541	-4477	1855.	.992	464 .5	.3987 -3	2178.	.38 .52
1.487	.85 .542	-4477	1856.	.992	464 .8	.3984 -3	2179.	.38 .53
1.487	.85 .544	-4477	1856.	.992	465 .0	.3981 -3	2180.	.38 .54
1.486	.85 .545	-4477	1857.	.992	465 .3	.3977 -3	2181.	.38 .55
1.486	.85 .546	-4477	1858.	.992	465 .5	.3974 -3	2182.	.38 .56
1.485	.85 .547	-4477	1859.	.992	465 .8	.3971 -3	2183.	.38 .57
1.485	.85 .548	-4477	1860.	.992	466 .0	.3968 -3	2184.	.38 .58
1.485	.85 .549	-4477	1861.	.992	466 .2	.3965 -3	2185.	.38 .59
1.485	.85 .550	-4477						
1.484	.85 .553	-4477	1862.	.992	466 .5	.3962 -3	2186.	.38 .60
1.484	.85 .553	-4477	1863.	.992	466 .7	.3959 -3	2187.	.38 .61
1.483	.85 .554	-4477	1864.	.992	467 .0	.3956 -3	2188.	.38 .63
1.483	.85 .555	-4477	1865.	.992	467 .2	.3953 -3	2189.	.38 .64
1.483	.85 .555	-4477	1866.	.992	467 .5	.3950 -3	2190.	.38 .65
1.482	.85 .556	-4477	1867.	.992	467 .7	.3947 -3	2191.	.38 .66
1.482	.85 .557	-4477	1868.	.992	467 .9	.3944 -3	2192.	.38 .67
1.481	.85 .560	-4477	1869.	.992	468 .1	.3941 -3	2193.	.38 .68
1.481	.85 .561	-4477	1870.	.992	468 .4	.3938 -3	2194.	.38 .69
1.481	.85 .562	-4477	1871.	.992	468 .7	.3935 -3	2195.	.38 .70
1.480	.85 .563	-4477	1872.	.992	468 .9	.3932 -3	2200.	.38 .71
1.480	.85 .564	-4477	1873.	.992	469 .1	.3929 -3	2201.	.38 .72
1.479	.85 .565	-4477	1874.	.992	469 .4	.3926 -3	2203.	.38 .73
1.479	.85 .566	-4477	1875.	.992	469 .6	.3923 -3	2204.	.38 .74
1.478	.85 .567	-4477	1876.	.992	469 .8	.3920 -3	2205.	.38 .75
1.478	.85 .568	-4477	1877.	.992	470 .0	.3917 -3	2207.	.38 .76
1.478	.85 .570	-4477	1878.	.992	470 .3	.3914 -3	2208.	.38 .77
1.478	.85 .571	-4477	1879.	.992	470 .6	.3911 -3	2209.	.38 .78
1.477	.85 .572	-4477	1880.	.992	470 .8	.3907 -3	2211.	.38 .79
1.477	.85 .573	-4477	1881.	.992	471 .1	.3904 -3		
1.476	.85 .574	-4477	1882.	.992	471 .3	.3901 -3	2212.	.38 .80
1.476	.85 .576	-4477	1883.	.992	471 .6	.3898 -3	2213.	.38 .81
1.476	.85 .577	-4477	1884.	.992	471 .8	.3895 -3	2214.	.38 .82
1.475	.85 .578	-4477	1885.	.992	472 .0	.3892 -3	2215.	.38 .83
1.475	.85 .579	-4477	1886.	.992	472 .3	.3889 -3	2216.	.38 .84
1.475	.85 .580	-4477	1887.	.992	472 .6	.3886 -3	2217.	.38 .85
1.474	.85 .581	-4477	1888.	.992	472 .8	.3883 -3	2218.	.38 .86
1.474	.85 .582	-4477	1889.	.992	472 .0	.3880 -3	2219.	.38 .87
1.473	.85 .584	-4477	1890.	.992	472 .5	.3877 -3	2220.	.38 .88
1.473	.85 .585	-4477	1891.	.992	473 .0	.3874 -3	2222.	.38 .89
1.472	.85 .586	-4477	1892.	.992	473 .3	.3871 -3	2223.	.38 .90
1.472	.85 .587	-4477	1893.	.992	474 .0	.3868 -3	2224.	.38 .91
1.472	.85 .588	-4477	1894.	.992	474 .5	.3865 -3	2225.	.38 .92
1.471	.85 .589	-4477	1895.	.992	474 .7	.3862 -3	2226.	.38 .93
1.471	.85 .590	-4477	1896.	.992	475 .0	.3859 -3	2227.	.38 .94
1.470	.85 .591	-4477	1897.	.992	475 .2	.3856 -3	2228.	.38 .95
1.470	.85 .592	-4477	1898.	.992	475 .5	.3853 -3	2229.	.38 .96
1.470	.85 .593	-4477	1899.	.992	475 .7	.3848 -3	2230.	.38 .97
1.470	.85 .594	-4477	1900.	.992	475 .9	.3845 -3	2231.	.38 .98

TABLE I.- VALUES FOR RATIOS OF

M	R/R <sub>t</sub>	P/P <sub>t</sub>	T/T <sub>t</sub>	s/s <sub>t</sub>	Q/Q <sub>t</sub>	A <sup>*</sup> /A	V/V <sub>0</sub>	V/V <sup>2</sup>
3.9 .00	1.719-6	.8734-4	.969-2	.4437-1	.2179-3	.2687-3	.9990	1.99803
3.9 .01	1.717-6	.8728-4	.966-2	.4436-1	.2177-3	.2685-3	.9990	1.99803
3.9 .03	1.713-6	.8714-4	.965-2	.4433-1	.2174-3	.2680-3	.9990	1.99803
3.9 .04	1.710-6	.8707-4	.964-2	.4432-1	.2178-3	.2678-3	.9990	1.99803
3.9 .05	1.708-6	.8700-4	.963-2	.4431-1	.2179-3	.2676-3	.9990	1.99803
3.9 .07	1.706-6	.8698-4	.962-2	.4430-1	.2178-3	.2674-3	.9990	1.99803
3.9 .08	1.702-6	.8688-4	.961-2	.4429-1	.2168-3	.2672-3	.9990	1.99803
3.9 .09	1.700-6	.8680-4	.960-2	.4428-1	.2166-3	.2670-3	.9990	1.99803
3.9 .10	1.697-6	.8667-4	.958-2	.4424-1	.2161-3	.2664-3	.9990	1.99804
3.9 .11	1.695-6	.8660-4	.957-2	.4422-1	.2159-3	.2662-3	.9990	1.99804
3.9 .12	1.693-6	.8654-4	.956-2	.4420-1	.2157-3	.2660-3	.9990	1.99804
3.9 .13	1.692-6	.8651-4	.955-2	.4418-1	.2155-3	.2658-3	.9990	1.99804
3.9 .15	1.687-6	.8643-4	.953-2	.4410-1	.2154-3	.2654-3	.9990	1.99805
3.9 .17	1.6884-6	.8642-4	.952-2	.4409-1	.2153-3	.2653-3	.9990	1.99805
3.9 .18	1.6880-6	.8641-4	.951-2	.4410-1	.2149-3	.2650-3	.9990	1.99805
3.9 .19	1.678-6	.8608-4	.950-2	.4415-1	.2148-3	.2648-3	.9990	1.99805
3.9 .20	1.676-6	.8601-4	.949-2	.4414-1	.2146-3	.2646-3	.9990	1.99805
3.9 .21	1.675-6	.8598-4	.948-2	.4413-1	.2144-3	.2644-3	.9990	1.99805
3.9 .23	1.672-6	.8588-4	.947-2	.4412-1	.2141-3	.2642-3	.9990	1.99805
3.9 .24	1.667-6	.8557-4	.945-2	.4409-1	.2136-3	.2638-3	.9990	1.99805
3.9 .25	1.665-6	.8560-4	.944-2	.4409-1	.2135-3	.2636-3	.9990	1.99805
3.9 .27	1.661-6	.8555-4	.943-2	.4406-1	.2135-3	.2634-3	.9990	1.99805
3.9 .28	1.659-6	.8559-4	.942-2	.4405-1	.2133-3	.2632-3	.9990	1.99805
3.9 .29	1.657-6	.8548-4	.940-2	.4404-1	.2131-3	.2630-3	.9990	1.99805
3.9 .30	1.655-6	.8536-4	.939-2	.4403-1	.2130-3	.2628-3	.9990	1.99805
3.9 .31	1.6551-6	.8529-4	.938-2	.4402-1	.2128-3	.2626-3	.9990	1.99805
3.9 .33	1.648-6	.8564-4	.936-2	.4401-1	.2126-3	.2624-3	.9990	1.99805
3.9 .34	1.644-6	.8510-4	.935-2	.4399-1	.2124-3	.2622-3	.9990	1.99805
3.9 .35	1.6444-6	.8503-4	.934-2	.4397-1	.2122-3	.2620-3	.9990	1.99805
3.9 .36	1.6448-6	.8500-4	.933-2	.4396-1	.2120-3	.2618-3	.9990	1.99805
3.9 .37	1.6449-6	.8484-4	.932-2	.4395-1	.2118-3	.2616-3	.9990	1.99805
3.9 .38	1.6447-6	.8477-4	.931-2	.4394-1	.2117-3	.2614-3	.9990	1.99805
3.9 .40	1.634-6	.8471-4	.930-2	.4392-1	.2114-3	.2606-3	.9990	1.99807
3.9 .41	1.6350-6	.8465-4	.929-2	.4391-1	.2112-3	.2604-3	.9990	1.99807
3.9 .43	1.6350-6	.8458-4	.928-2	.4390-1	.2110-3	.2602-3	.9990	1.99807
3.9 .45	1.628-6	.8445-4	.927-2	.4389-1	.2108-3	.2600-3	.9990	1.99807
3.9 .46	1.6282-6	.8442-4	.926-2	.4388-1	.2106-3	.2598-3	.9990	1.99808
3.9 .47	1.622-6	.8430-4	.925-2	.4386-1	.2104-3	.2596-3	.9990	1.99808
3.9 .48	1.619-6	.8426-4	.924-2	.4385-1	.2102-3	.2594-3	.9990	1.99808
3.9 .49	1.617-6	.8420-4	.923-2	.4384-1	.2101-3	.2590-3	.9990	1.99808
3.9 .50	1.615-6	.8413-4	.920-2	.4382-1	.2099-3	.2588-3	.9990	1.99808
3.9 .51	1.614-6	.8407-4	.919-2	.4381-1	.2098-3	.2586-3	.9990	1.99808
3.9 .52	1.609-6	.8393-4	.918-2	.4380-1	.2096-3	.2584-3	.9990	1.99808
3.9 .53	1.607-6	.8388-4	.917-2	.4379-1	.2095-3	.2582-3	.9990	1.99808
3.9 .54	1.605-6	.8382-4	.916-2	.4378-1	.2094-3	.2580-3	.9990	1.99808
3.9 .55	1.603-6	.8375-4	.915-2	.4376-1	.2093-3	.2578-3	.9990	1.99808
3.9 .56	1.601-6	.8369-4	.914-2	.4375-1	.2092-3	.2576-3	.9990	1.99809
3.9 .57	1.599-6	.8353-4	.913-2	.4373-1	.2091-3	.2573-3	.9990	1.99809
3.9 .58	1.5997-6	.8350-4	.912-2	.4371-1	.2090-3	.2571-3	.9990	1.99809
3.9 .59	1.595-6	.8350-4	.910-2	.4371-1	.2088-3	.2569-3	.9990	1.99809
3.9 .60	1.593-6	.8340-4	.909-2	.4361-1	.2086-3	.2567-3	.9990	1.99809
3.9 .61	1.589-6	.8337-4	.908-2	.4360-1	.2084-3	.2565-3	.9990	1.99809
3.9 .63	1.588-6	.8331-4	.907-2	.4357-1	.2082-3	.2561-3	.9990	1.99809
3.9 .64	1.5887-6	.8328-4	.906-2	.4356-1	.2080-3	.2559-3	.9990	1.99809
3.9 .65	1.5888-6	.8318-4	.905-2	.4354-1	.2078-3	.2557-3	.9990	1.99810
3.9 .66	1.5889-6	.8315-4	.904-2	.4353-1	.2076-3	.2555-3	.9990	1.99810
3.9 .67	1.5889-6	.8306-4	.903-2	.4352-1	.2074-3	.2553-3	.9990	1.99810
3.9 .68	1.5889-6	.8293-4	.902-2	.4351-1	.2072-3	.2551-3	.9990	1.99810
3.9 .69	1.5875-6	.8287-4	.901-2	.4350-1	.2068-3	.2549-3	.9990	1.99810
3.9 .70	1.573-6	.8281-4	.900-2	.4349-1	.2066-3	.2547-3	.9990	1.99810
3.9 .71	1.571-6	.8275-4	.899-2	.4348-1	.2064-3	.2545-3	.9991	1.99810
3.9 .72	1.569-6	.8268-4	.898-2	.4347-1	.2063-3	.2544-3	.9991	1.99810
3.9 .73	1.5682-6	.8262-4	.897-2	.4346-1	.2062-3	.2542-3	.9991	1.99810
3.9 .74	1.5662-6	.8256-4	.896-2	.4345-1	.2061-3	.2541-3	.9991	1.99810
3.9 .75	1.5653-6	.8250-4	.895-2	.4344-1	.2060-3	.2540-3	.9991	1.99810
3.9 .76	1.5651-6	.8243-4	.894-2	.4343-1	.2059-3	.2538-3	.9991	1.99810
3.9 .77	1.5659-6	.8237-4	.893-2	.4342-1	.2058-3	.2537-3	.9991	1.99810
3.9 .78	1.5657-6	.8231-4	.892-2	.4341-1	.2057-3	.2536-3	.9991	1.99810
3.9 .79	1.5656-6	.8228-4	.891-2	.4340-1	.2056-3	.2535-3	.9991	1.99810
3.9 .80	1.5654-6	.8219-4	.890-2	.4338-1	.2055-3	.2534-3	.9991	1.99810
3.9 .81	1.5654-6	.8215-4	.889-2	.4336-1	.2054-3	.2533-3	.9991	1.99810
3.9 .82	1.5654-6	.8206-4	.888-2	.4335-1	.2053-3	.2532-3	.9991	1.99810
3.9 .83	1.5648-6	.8200-4	.887-2	.4334-1	.2052-3	.2531-3	.9991	1.99810
3.9 .84	1.5646-6	.8188-4	.886-2	.4333-1	.2051-3	.2530-3	.9991	1.99810
3.9 .85	1.5644-6	.8186-4	.885-2	.4332-1	.2050-3	.2529-3	.9991	1.99810
3.9 .86	1.5642-6	.8182-4	.884-2	.4331-1	.2049-3	.2528-3	.9991	1.99810
3.9 .87	1.5640-6	.8176-4	.883-2	.4330-1	.2048-3	.2527-3	.9991	1.99810
3.9 .88	1.5638-6	.8169-4	.882-2	.4329-1	.2047-3	.2526-3	.9991	1.99810
3.9 .89	1.5635-6	.8163-4	.881-2	.4328-1	.2046-3	.2525-3	.9991	1.99810
3.9 .90	1.5534-6	.8157-4	.881-2	.4327-1	.2045-3	.2524-3	.9991	1.99810
3.9 .91	1.5532-6	.8151-4	.880-2	.4326-1	.2044-3	.2523-3	.9991	1.99810
3.9 .93	1.5529-6	.8145-4	.879-2	.4324-1	.2043-3	.2522-3	.9991	1.99810
3.9 .94	1.5527-6	.8133-4	.877-2	.4323-1	.2042-3	.2521-3	.9991	1.99810
3.9 .95	1.5525-6	.8120-4	.875-2	.4321-1	.2041-3	.2520-3	.9991	1.99810
3.9 .96	1.5519-6	.8118-4	.874-2	.4320-1	.2040-3	.2519-3	.9991	1.99810
3.9 .97	1.5517-6	.8116-4	.873-2	.4319-1	.2039-3	.2518-3	.9991	1.99810
3.9 .98	1.5515-6	.8108-4	.872-2	.4318-1	.2038-3	.2517-3	.9991	1.99810
4.0 .00	1.5517-6	.8102-4	.871-2	.4317-1	.2037-3	.2516-3	.9991	1.99810

## FUNDAMENTAL FLOW EQUATIONS

$\mu$	$\nu$	$M_2$	$P_2/P_1$	$\rho_2/\rho_1$	$T_2/T_1$	$P_{t,2}/P_{t,1}$	$P_{t,2}/P_1$	$M$
1.469	85.596	4.477	1901.	3.992	476.2	3642.3	2235.	39.00
1.469	85.597	4.477	1902.	3.992	476.4	3639.3	2236.	39.01
1.469	85.598	4.477	1903.	3.992	476.7	3636.3	2237.	39.02
1.468	85.599	4.477	1904.	3.992	476.9	3633.3	2238.	39.03
1.468	85.601	4.477	1905.	3.992	477.2	3630.3	2239.	39.04
1.467	85.603	4.477	1906.	3.992	477.4	3627.3	2240.	39.05
1.467	85.603	4.477	1907.	3.992	477.7	3624.3	2241.	39.06
1.467	85.604	4.477	1908.	3.992	477.9	3621.3	2242.	39.07
1.466	85.605	4.477	1909.	3.992	478.1	3618.3	2243.	39.08
1.466	85.606	4.477	1910.	3.992	478.4	3615.3	2244.	39.09
1.466	85.607	4.477	1911.	3.992	478.6	3613.3	2245.	39.10
1.465	85.608	4.477	1912.	3.992	478.9	3610.3	2246.	39.11
1.465	85.609	4.477	1913.	3.992	479.1	3607.3	2247.	39.12
1.464	85.611	4.477	1914.	3.992	479.4	3604.3	2248.	39.13
1.464	85.612	4.477	1915.	3.992	479.6	3601.3	2249.	39.14
1.464	85.613	4.477	1916.	3.992	479.9	3608.3	2250.	39.15
1.463	85.614	4.477	1917.	3.992	480.1	3605.3	2251.	39.16
1.463	85.615	4.477	1918.	3.992	480.3	3602.3	2252.	39.17
1.462	85.616	4.477	1919.	3.992	480.6	3609.3	2253.	39.18
1.462	85.617	4.477	1920.	3.992	480.8	3606.3	2254.	39.19
1.462	85.618	4.477	1921.	3.992	481.1	3784.3	2255.	39.20
1.461	85.620	4.477	1922.	3.992	481.3	3781.3	2256.	39.21
1.461	85.621	4.477	1923.	3.992	481.6	3778.3	2257.	39.22
1.461	85.622	4.477	1924.	3.992	481.8	3775.3	2258.	39.23
1.460	85.623	4.477	1925.	3.992	482.1	3772.3	2259.	39.24
1.460	85.624	4.477	1926.	3.992	482.3	3769.3	2260.	39.25
1.459	85.625	4.477	1927.	3.992	482.6	3766.3	2261.	39.26
1.459	85.627	4.477	1928.	3.992	483.0	3761.3	2262.	39.27
1.458	85.628	4.477	1929.	3.992	483.3	3758.3	2263.	39.28
1.458	85.630	4.477	1930.	3.992	483.5	3755.3	2264.	39.29
1.458	85.632	4.477	1931.	3.992	483.8	3752.3	2265.	39.30
1.457	85.633	4.477	1932.	3.992	484.0	3749.3	2266.	39.31
1.457	85.634	4.477	1933.	3.992	484.3	3746.3	2267.	39.32
1.456	85.635	4.477	1934.	3.992	484.5	3743.3	2268.	39.33
1.456	85.636	4.477	1935.	3.992	484.8	3741.3	2269.	39.34
1.455	85.637	4.477	1936.	3.992	485.0	3738.3	2270.	39.35
1.455	85.638	4.477	1937.	3.992	485.2	3735.3	2271.	39.36
1.455	85.640	4.477	1938.	3.992	485.5	3732.3	2272.	39.37
1.455	85.640	4.477	1939.	3.992	485.7	3729.3	2273.	39.38
1.454	85.641	4.477	1940.	3.992	486.0	3726.3	2274.	39.40
1.454	85.642	4.477	1941.	3.992	486.2	3724.3	2275.	39.41
1.453	85.643	4.477	1942.	3.992	486.5	3721.3	2276.	39.42
1.453	85.644	4.477	1943.	3.992	486.7	3718.3	2277.	39.43
1.453	85.645	4.477	1944.	3.992	487.0	3715.3	2278.	39.44
1.453	85.646	4.477	1945.	3.992	487.2	3712.3	2279.	39.45
1.452	85.647	4.477	1946.	3.992	487.5	3709.3	2280.	39.46
1.452	85.648	4.477	1947.	3.992	487.7	3707.3	2281.	39.47
1.451	85.649	4.477	1948.	3.992	488.0	3704.3	2282.	39.48
1.451	85.651	4.477	1949.	3.992	488.2	3701.3	2283.	39.49
1.451	85.652	4.477	1950.	3.992	488.5	3698.3	2284.	39.50
1.450	85.653	4.477	1951.	3.992	488.7	3695.3	2285.	39.51
1.450	85.654	4.477	1952.	3.992	489.0	3692.3	2286.	39.52
1.450	85.655	4.477	1953.	3.992	489.2	3689.3	2287.	39.53
1.449	85.656	4.477	1954.	3.992	489.4	3687.3	2288.	39.54
1.449	85.657	4.477	1955.	3.992	489.6	3684.3	2289.	39.55
1.448	85.658	4.477	1956.	3.992	489.9	3681.3	2290.	39.56
1.448	85.659	4.477	1957.	3.992	490.2	3678.3	2291.	39.57
1.447	85.660	4.477	1958.	3.992	490.4	3675.3	2292.	39.58
1.447	85.662	4.477	1959.	3.992	490.7	3673.3	2293.	39.59
1.447	85.663	4.477	1960.	3.992	490.9	3670.3	2294.	39.60
1.447	85.664	4.477	1961.	3.992	491.2	3668.3	2295.	39.61
1.446	85.665	4.477	1962.	3.992	491.4	3665.3	2296.	39.62
1.446	85.666	4.477	1963.	3.992	491.7	3662.3	2297.	39.63
1.445	85.667	4.477	1964.	3.992	492.0	3659.3	2298.	39.64
1.445	85.668	4.477	1965.	3.992	492.2	3657.3	2299.	39.65
1.444	85.669	4.477	1966.	3.992	492.4	3654.3	2300.	39.66
1.444	85.670	4.477	1967.	3.992	492.7	3651.3	2301.	39.67
1.444	85.671	4.477	1968.	3.992	492.9	3648.3	2302.	39.68
1.444	85.672	4.477	1969.	3.992	493.2	3646.3	2303.	39.69
1.443	85.674	4.477	1970.	3.992	493.4	3643.3	2304.	39.70
1.443	85.675	4.477	1971.	3.992	493.7	3640.3	2305.	39.71
1.442	85.676	4.477	1972.	3.992	493.9	3637.3	2306.	39.72
1.442	85.677	4.477	1973.	3.992	494.1	3635.3	2307.	39.73
1.442	85.678	4.477	1974.	3.992	494.4	3632.3	2308.	39.74
1.442	85.679	4.477	1975.	3.992	494.6	3629.3	2309.	39.75
1.441	85.680	4.477	1976.	3.992	494.9	3626.3	2310.	39.76
1.441	85.681	4.477	1977.	3.992	495.1	3624.3	2311.	39.77
1.440	85.682	4.477	1978.	3.992	495.4	3621.3	2312.	39.78
1.440	85.683	4.477	1979.	3.992	495.6	3618.3	2313.	39.79
1.439	85.684	4.477	1980.	3.992	495.9	3615.3	2314.	39.80
1.439	85.685	4.477	1981.	3.992	496.1	3613.3	2315.	39.81
1.439	85.687	4.477	1982.	3.992	496.4	3610.3	2316.	39.82
1.438	85.688	4.477	1983.	3.992	496.6	3607.3	2317.	39.83
1.438	85.689	4.477	1984.	3.992	496.9	3605.3	2318.	39.84
1.438	85.690	4.477	1985.	3.992	497.1	3602.3	2319.	39.85
1.437	85.691	4.477	1986.	3.992	497.3	3599.3	2320.	39.86
1.437	85.692	4.477	1987.	3.992	497.6	3596.3	2321.	39.87
1.436	85.693	4.477	1988.	3.992	497.9	3594.3	2322.	39.88
1.436	85.694	4.477	1989.	3.992	498.1	3591.3	2323.	39.89
1.436	85.695	4.477	1990.	3.992	498.4	3588.3	2324.	39.90
1.435	85.696	4.477	1991.	3.992	498.6	3586.3	2325.	39.91
1.435	85.697	4.477	1992.	3.992	498.9	3583.3	2326.	39.92
1.435	85.698	4.477	1993.	3.992	499.1	3580.3	2327.	39.93
1.434	85.699	4.477	1994.	3.992	499.4	3577.3	2328.	39.94
1.434	85.701	4.477	1995.	3.992	499.6	3574.3	2329.	39.95
1.434	85.702	4.477	1996.	3.992	499.9	3572.3	2330.	39.96
1.434	85.703	4.477	1997.	3.992	500.1	3569.3	2331.	39.97
1.433	85.704	4.477	1998.	3.992	500.4	3567.3	2332.	39.98
1.433	85.705	4.477	1999.	3.992	500.6	3564.3	2333.	39.99
1.433	85.706	4.477	2000.	3.992	500.9	3562.3	2334.	40.00

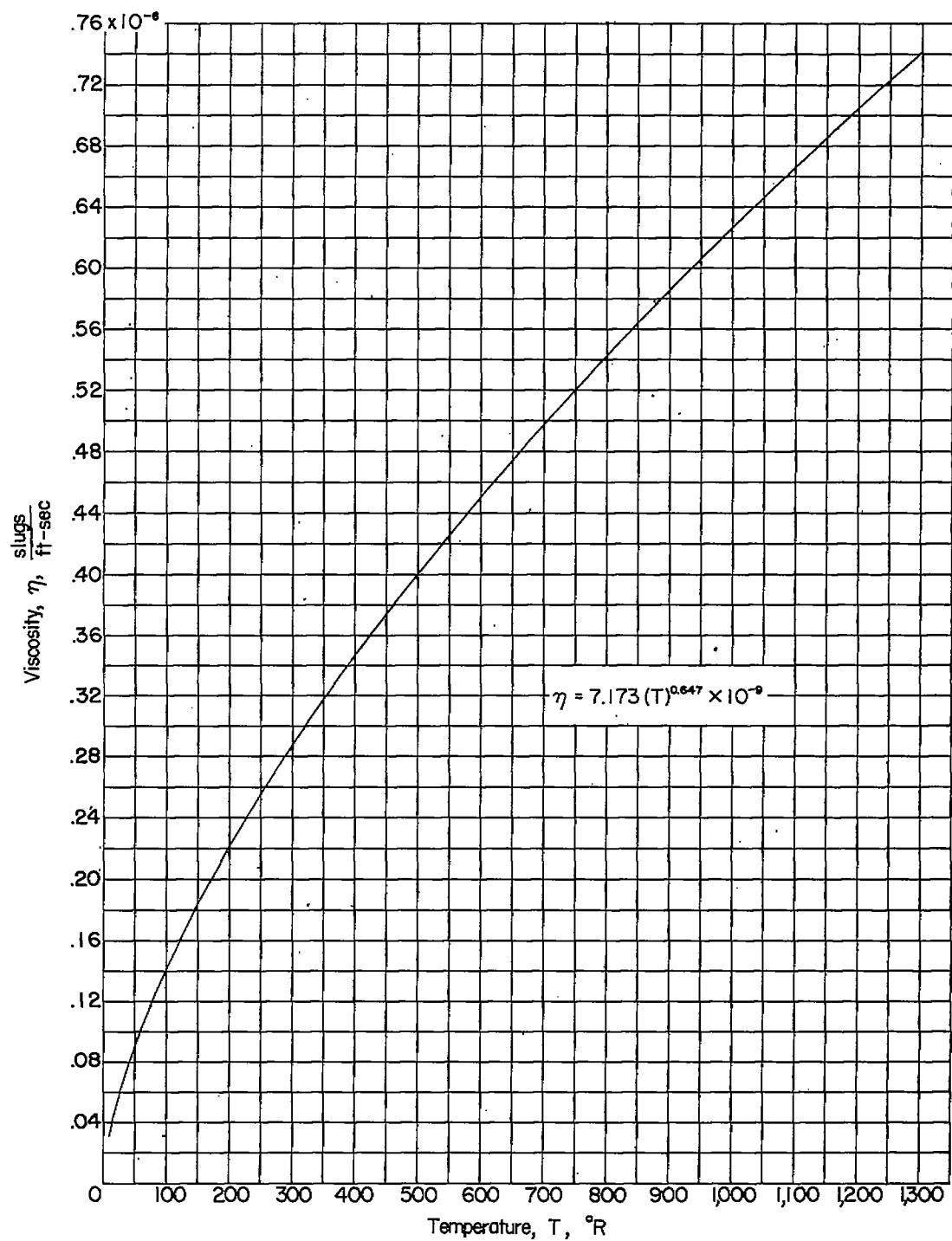


Figure 1.- Viscosity of helium as a function of temperature.

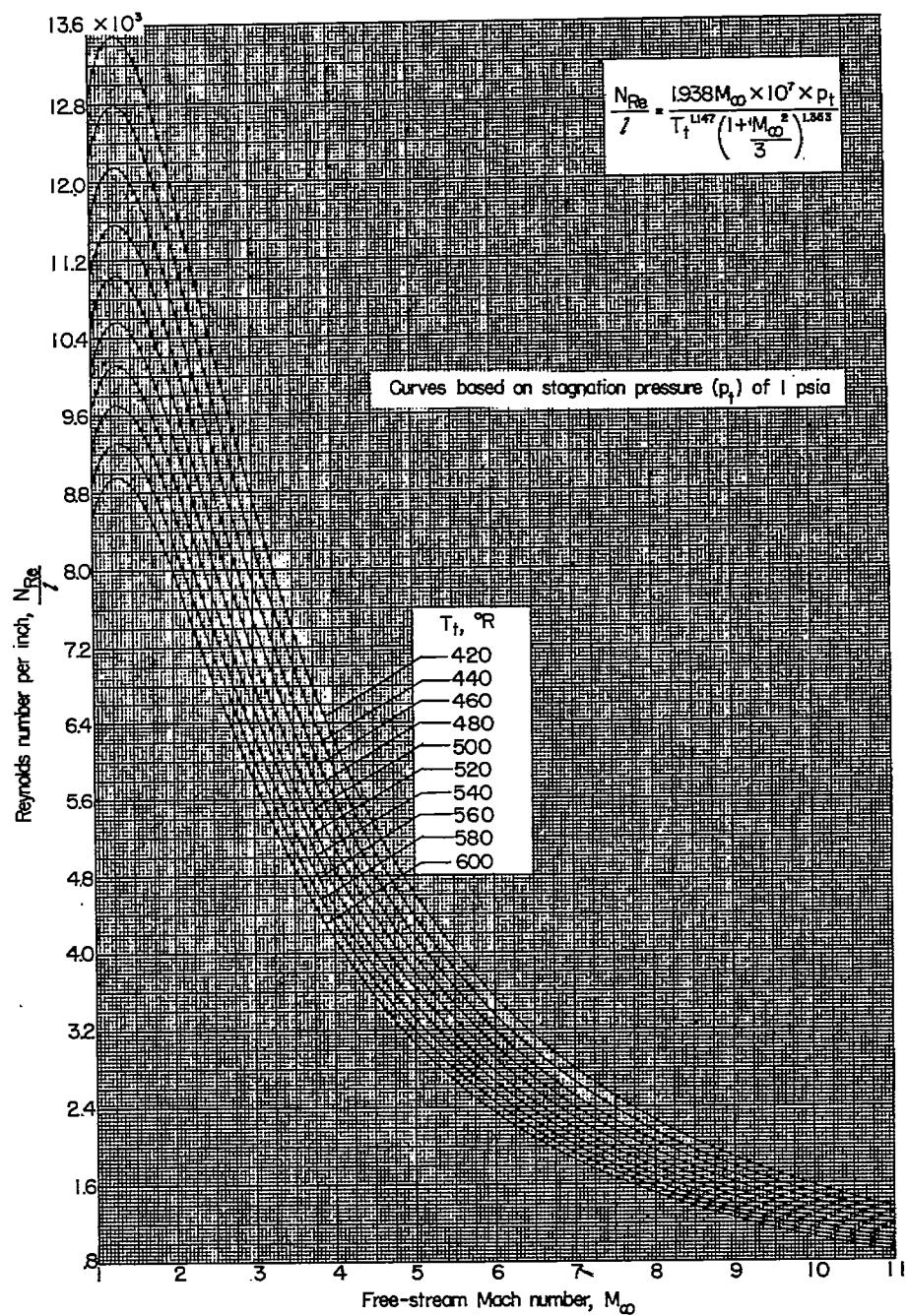
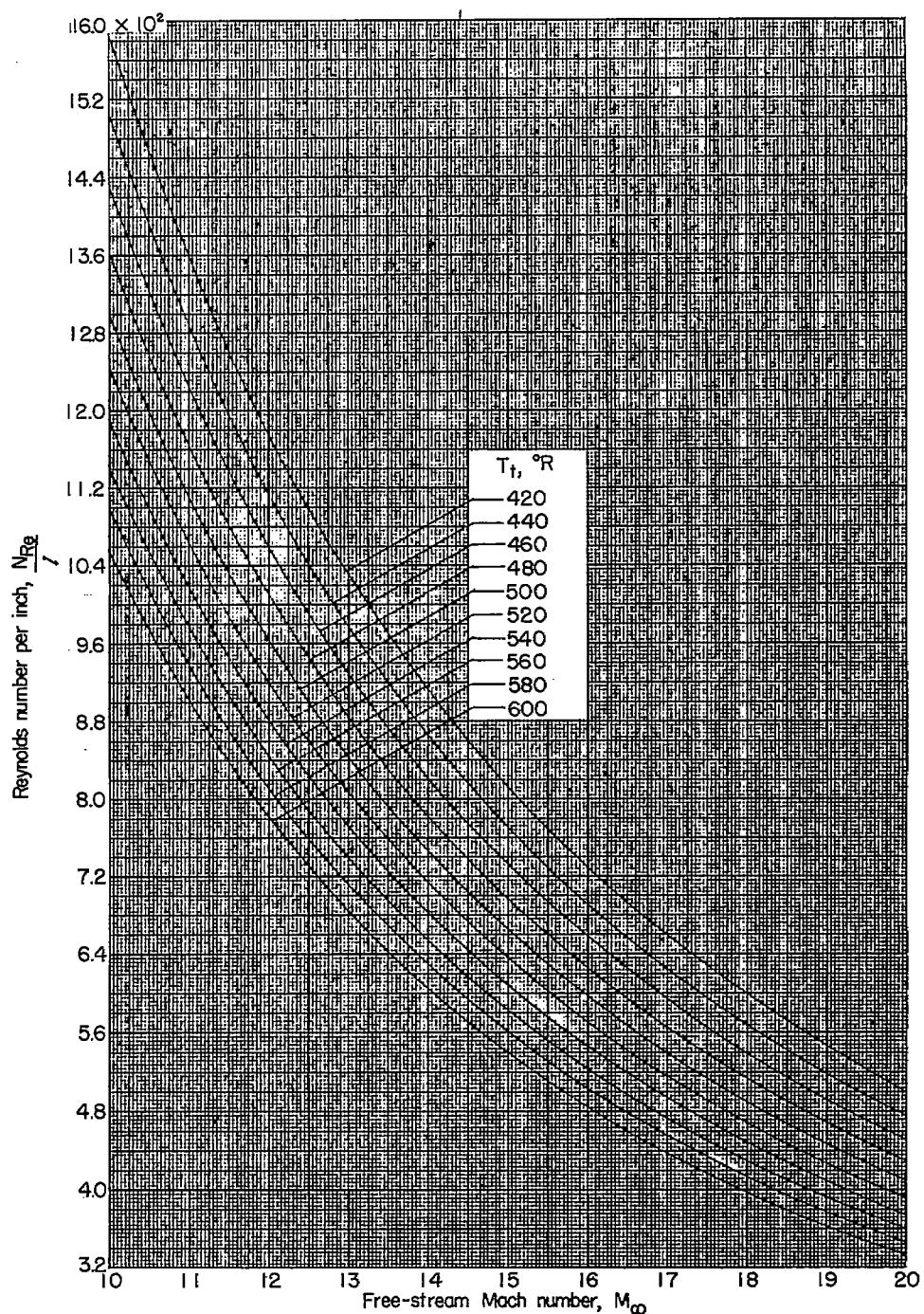
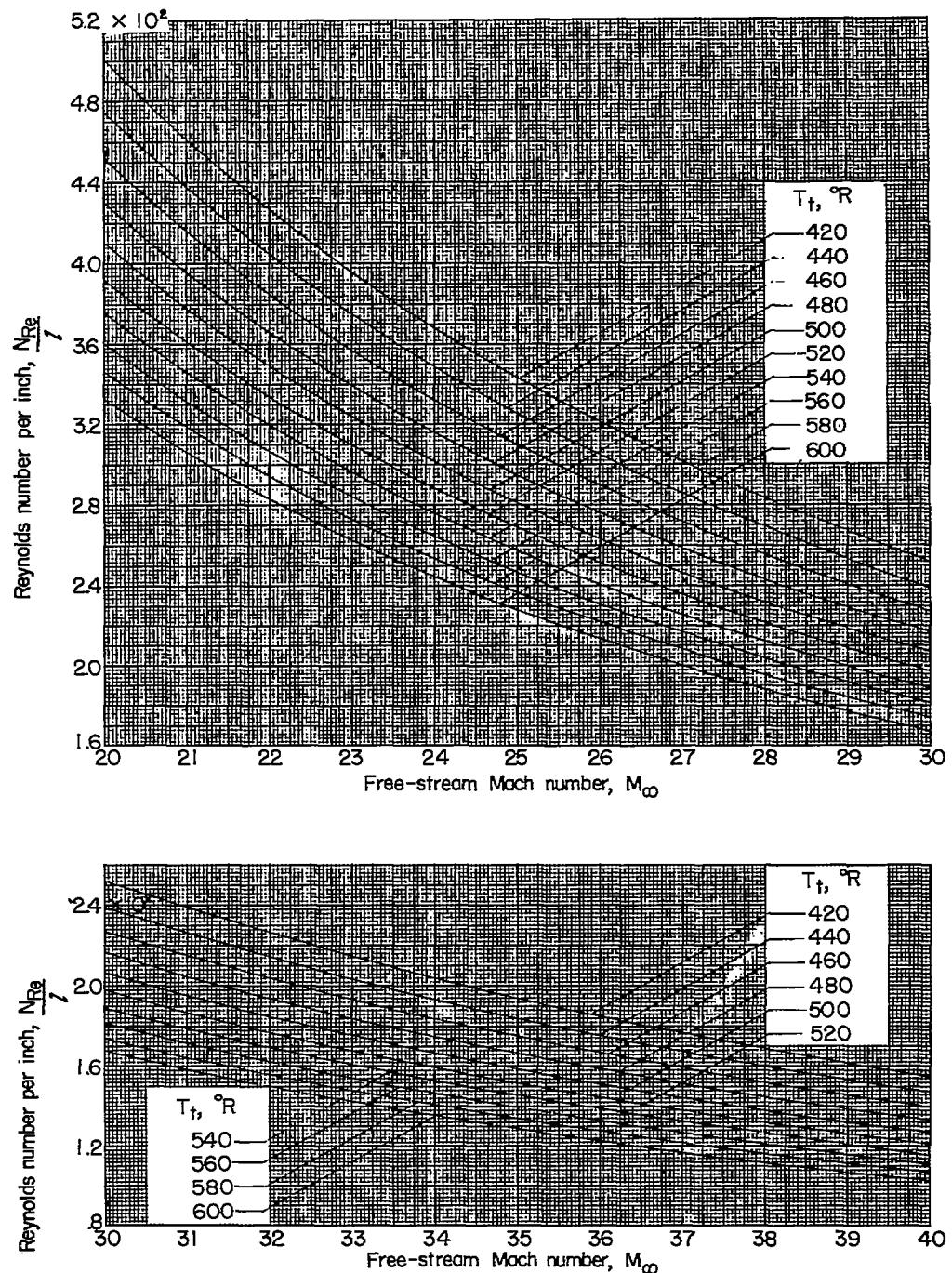
(a)  $M_\infty = 1$  to 11.

Figure 2.- Reynolds number per inch as a function of free-stream Mach number and stagnation temperature.



(b)  $M_\infty = 10$  to 20.

Figure 2.- Continued.



(c)  $M_\infty = 20$  to 40.

Figure 2.- Concluded.

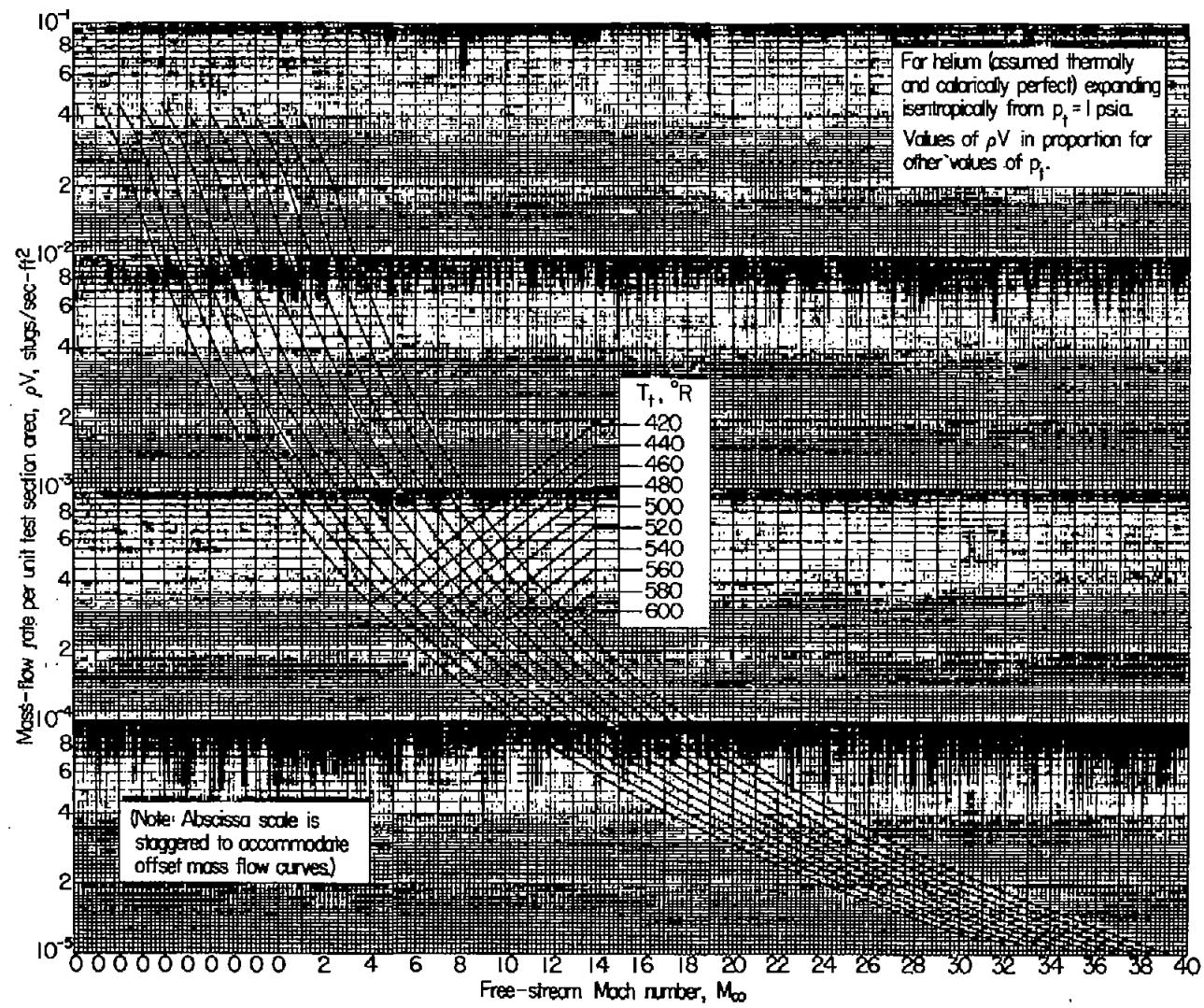


Figure 3.- Variation of mass-flow rate per unit test section area with Mach number.

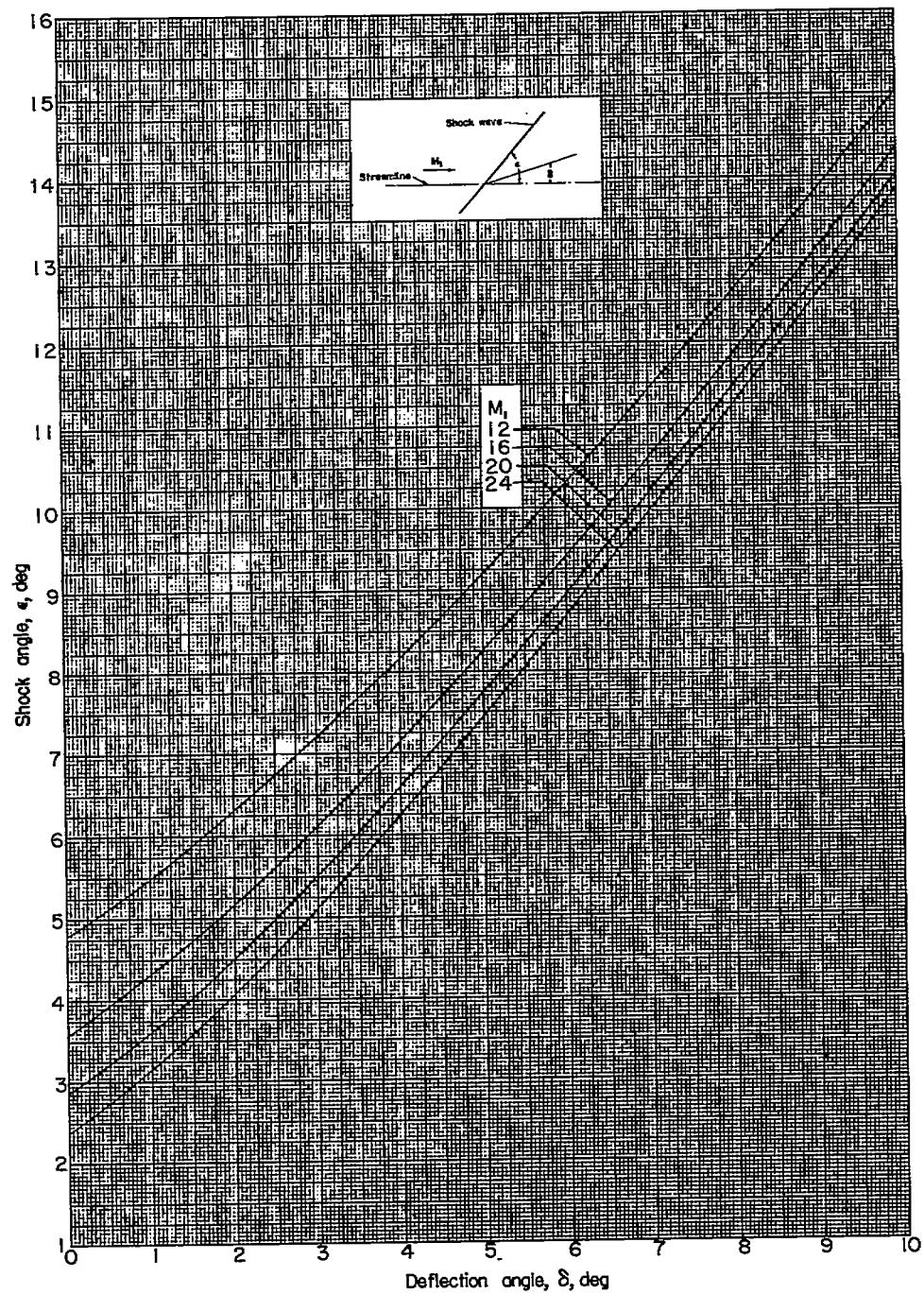
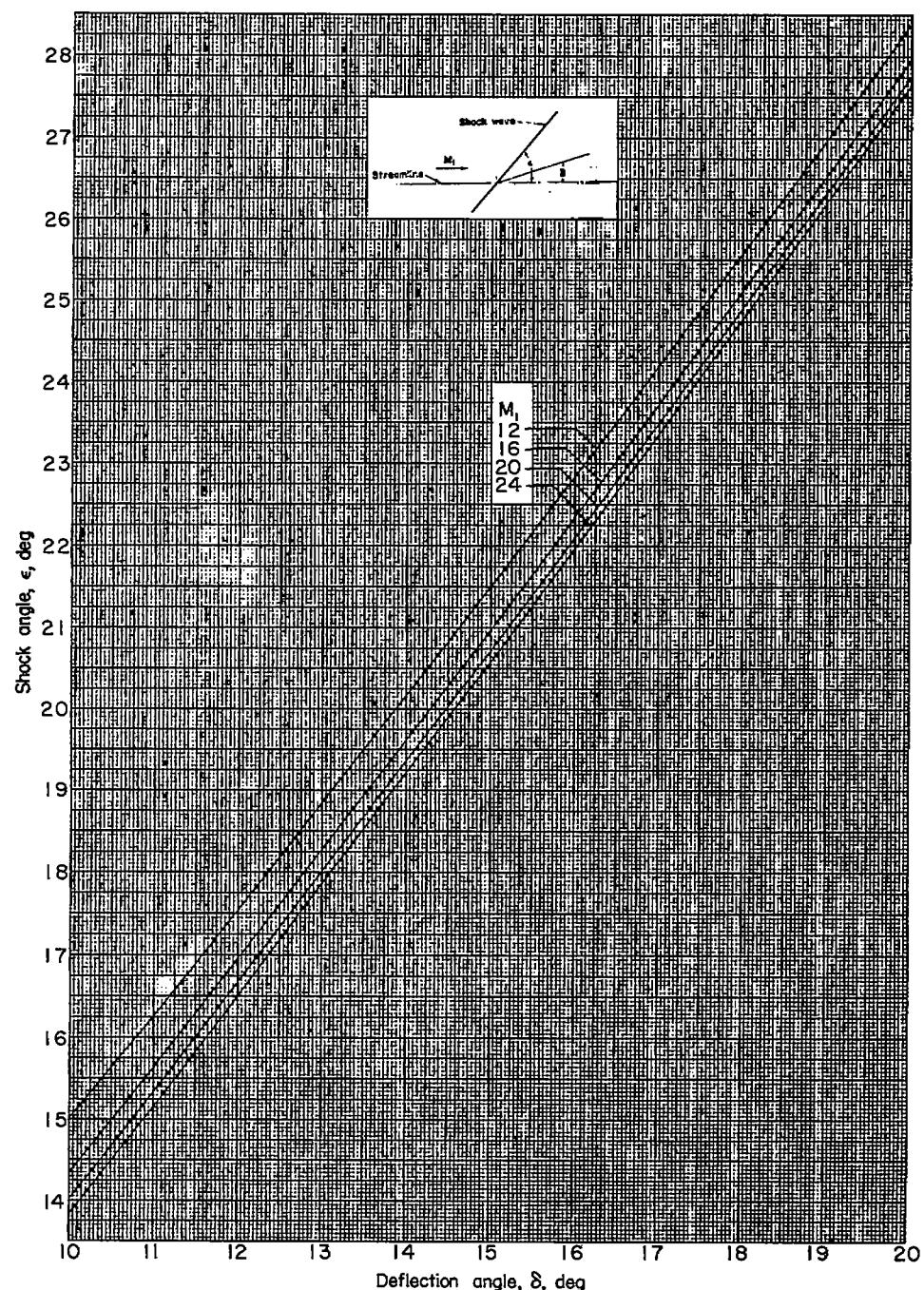
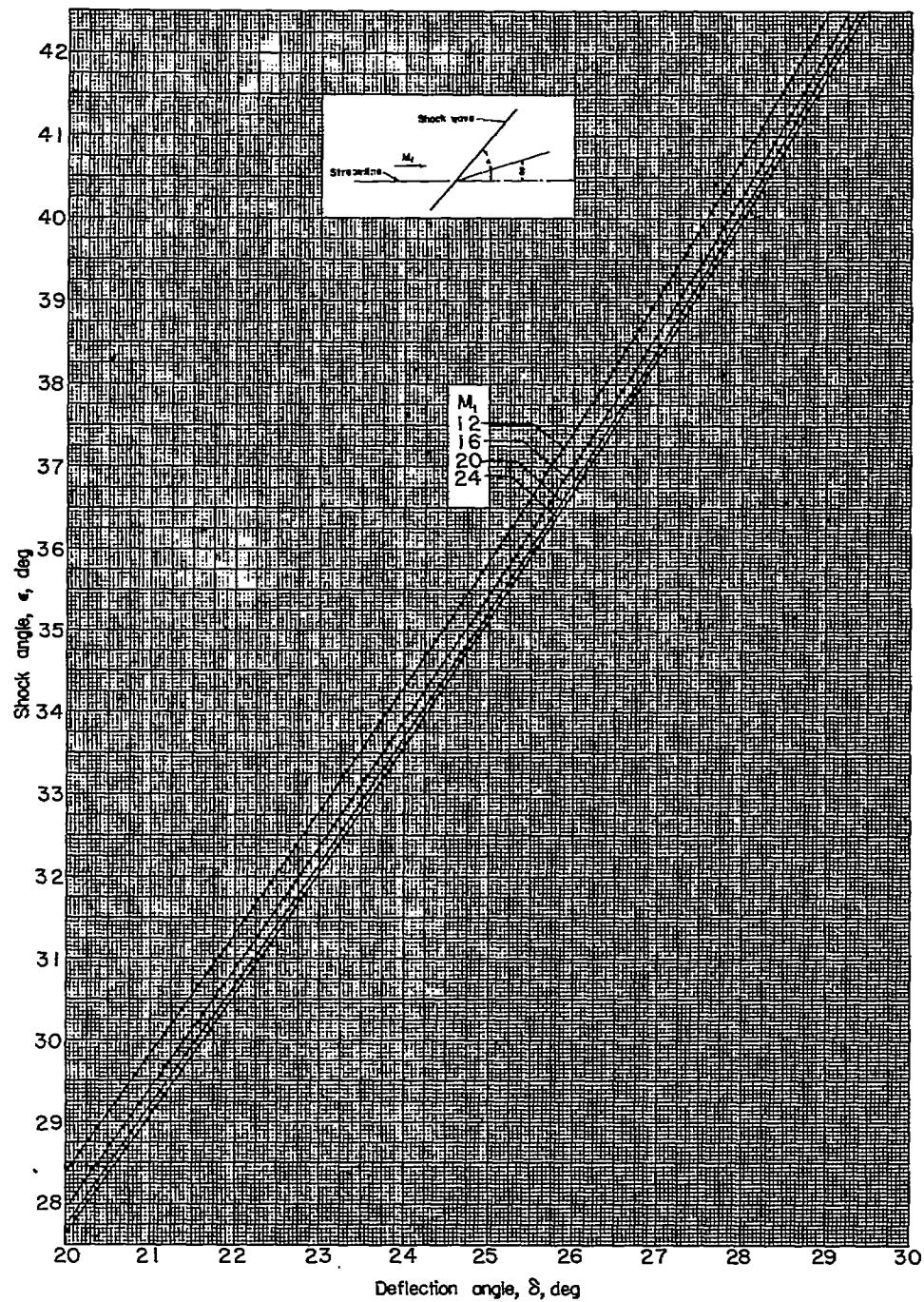
(a)  $\delta = 0^\circ$  to  $10^\circ$ .

Figure 4.- Variation of the shock-wave angle with flow deflection angle.



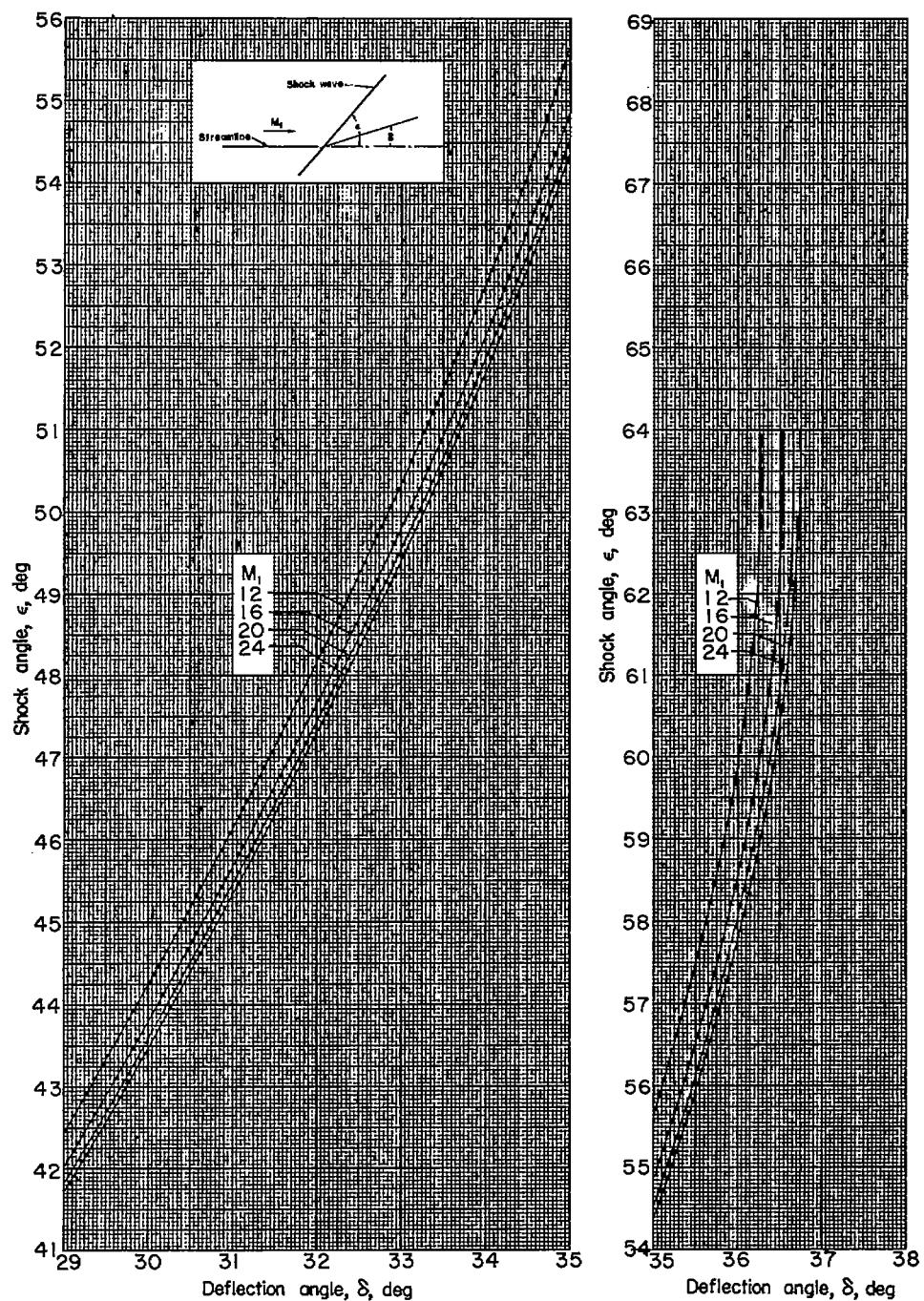
(b)  $\delta = 10^\circ$  to  $20^\circ$ .

Figure 4.- Continued.



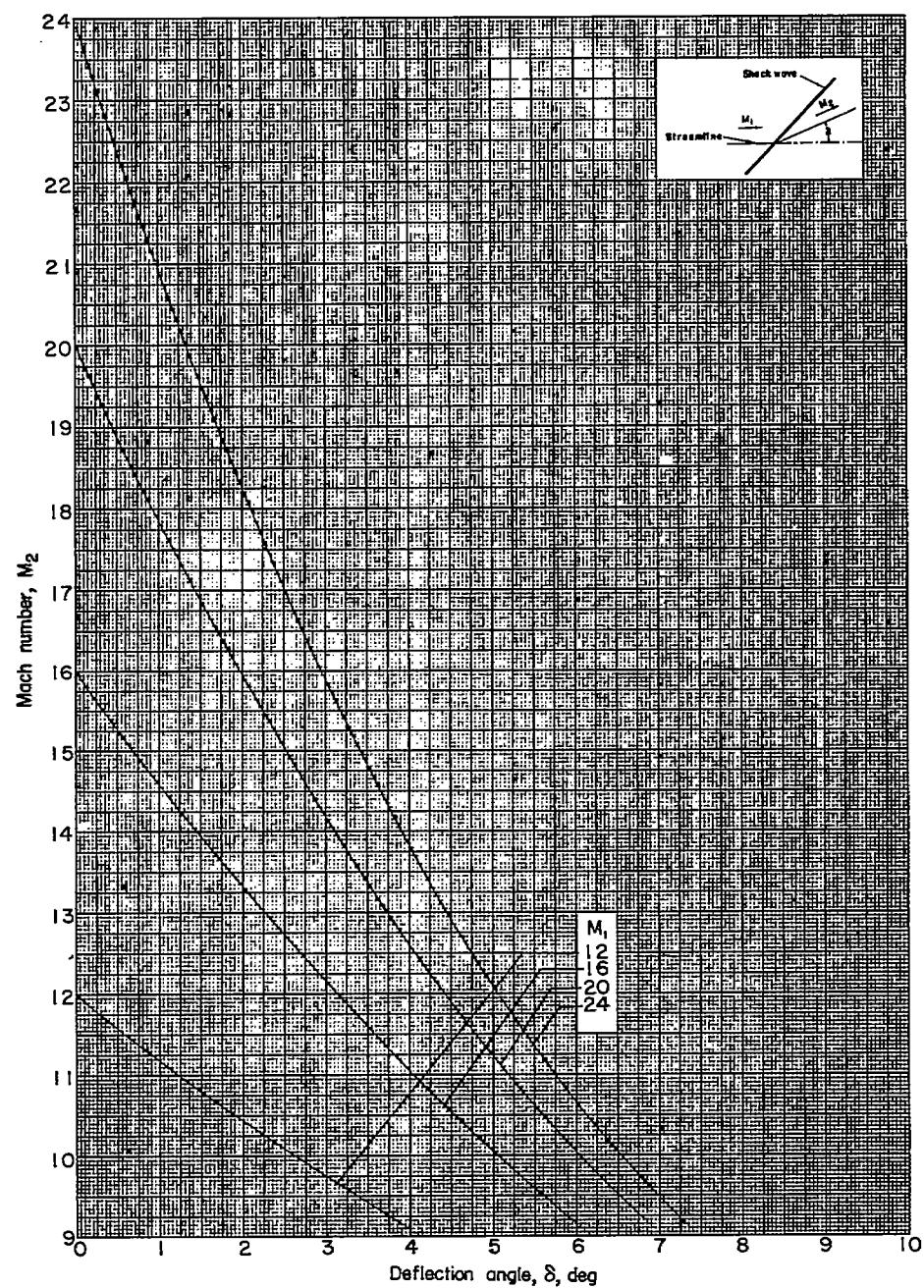
(c)  $\delta = 20^\circ$  to  $30^\circ$ .

Figure 4.- Continued.



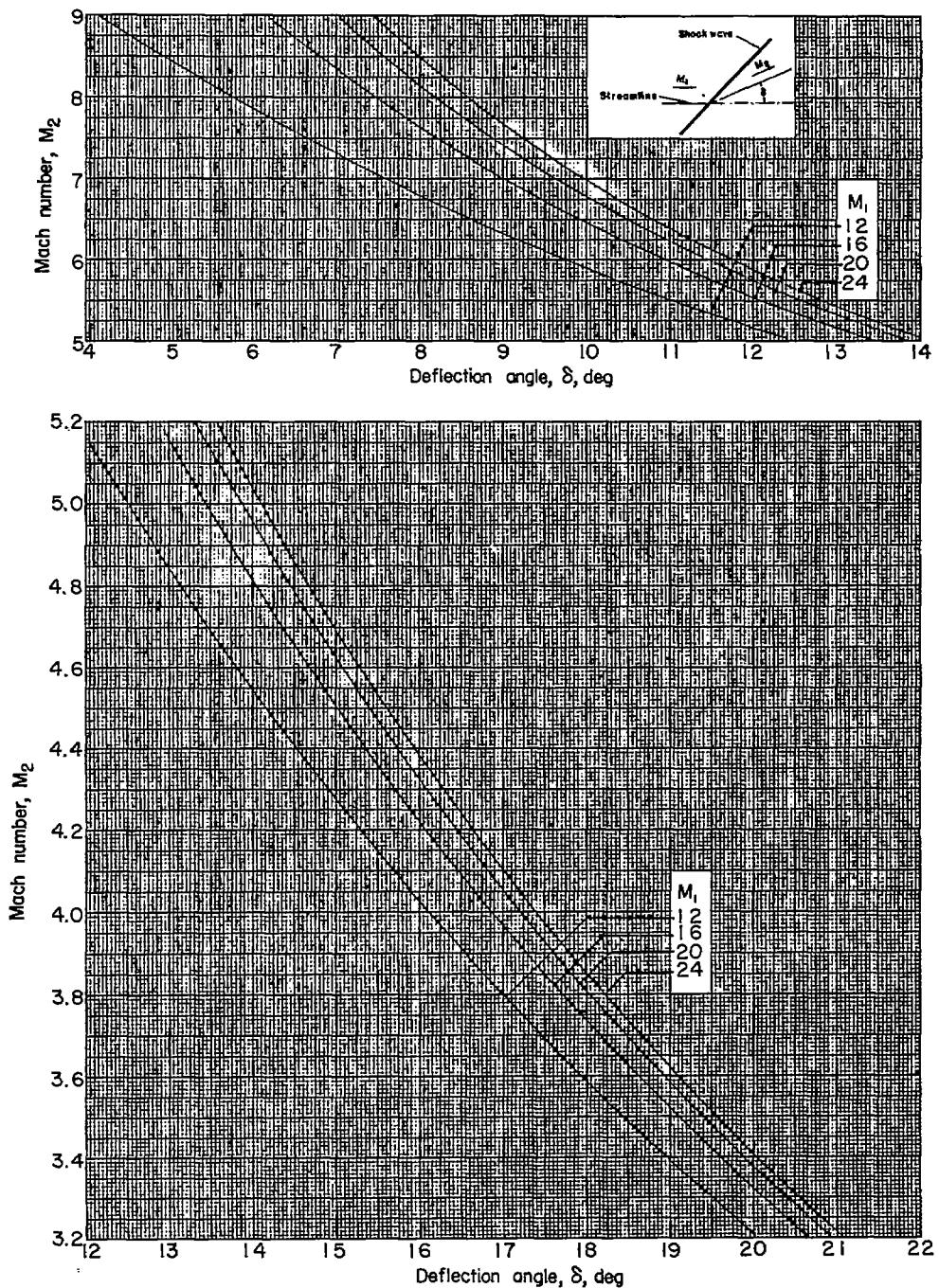
(d)  $\delta = 29^\circ$  to  $38^\circ$ .

Figure 4--Concluded.



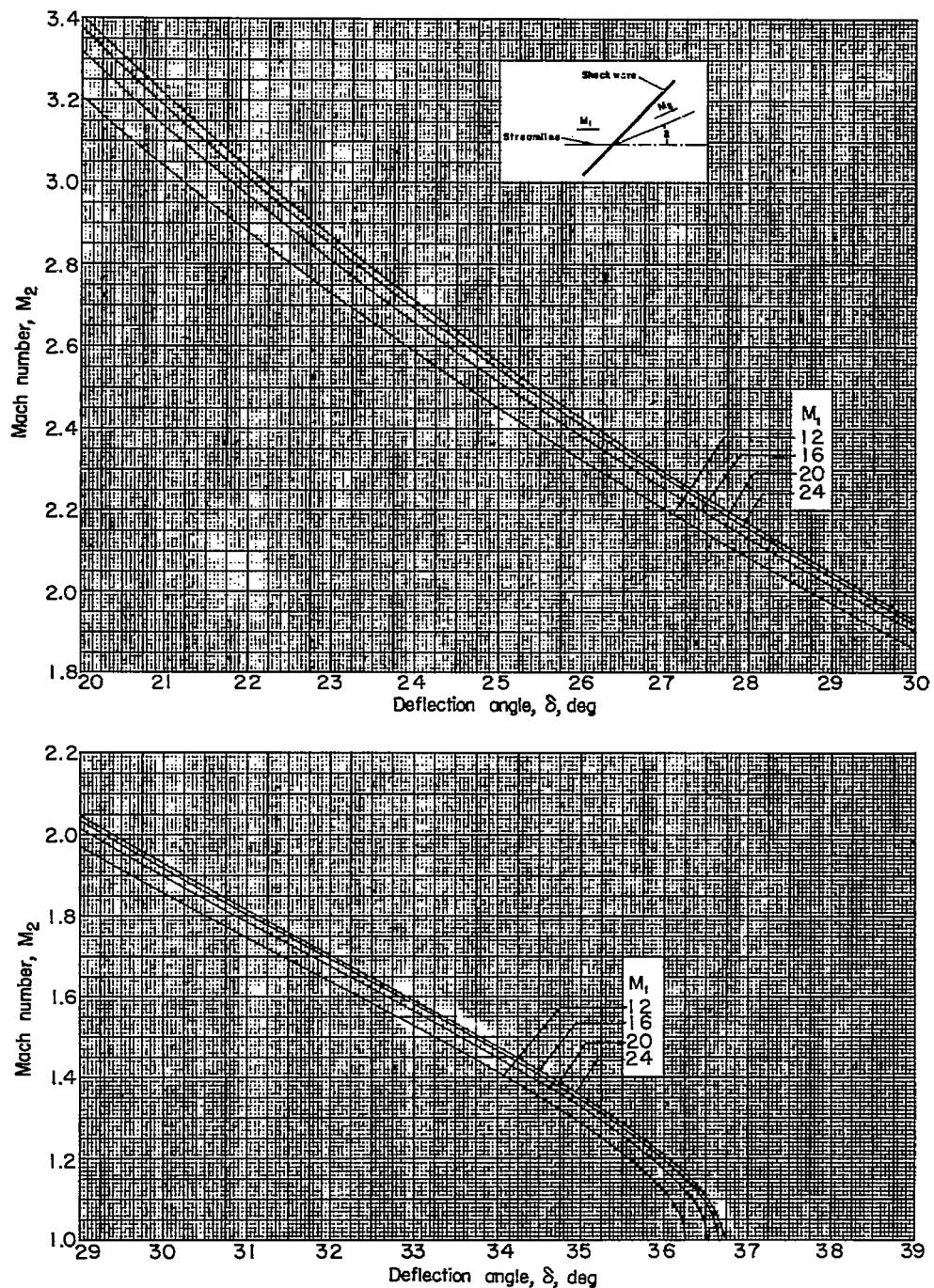
(a)  $\delta = 0^\circ$  to  $10^\circ$ .

Figure 5.- Variation of the Mach number through an oblique shock as a function of wedge angle.



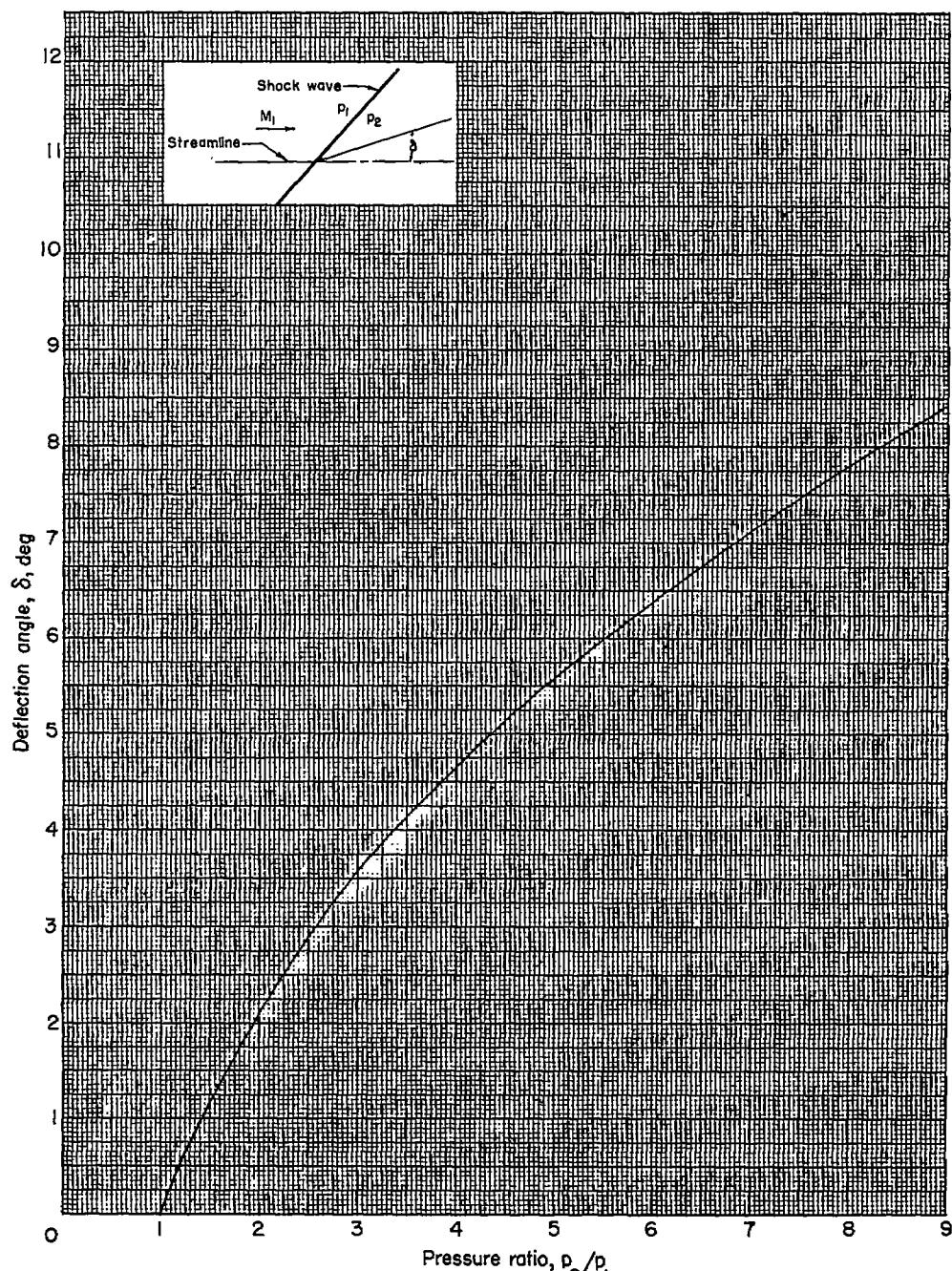
(b)  $\delta = 4^\circ$  to  $22^\circ$ .

Figure 5.- Continued.



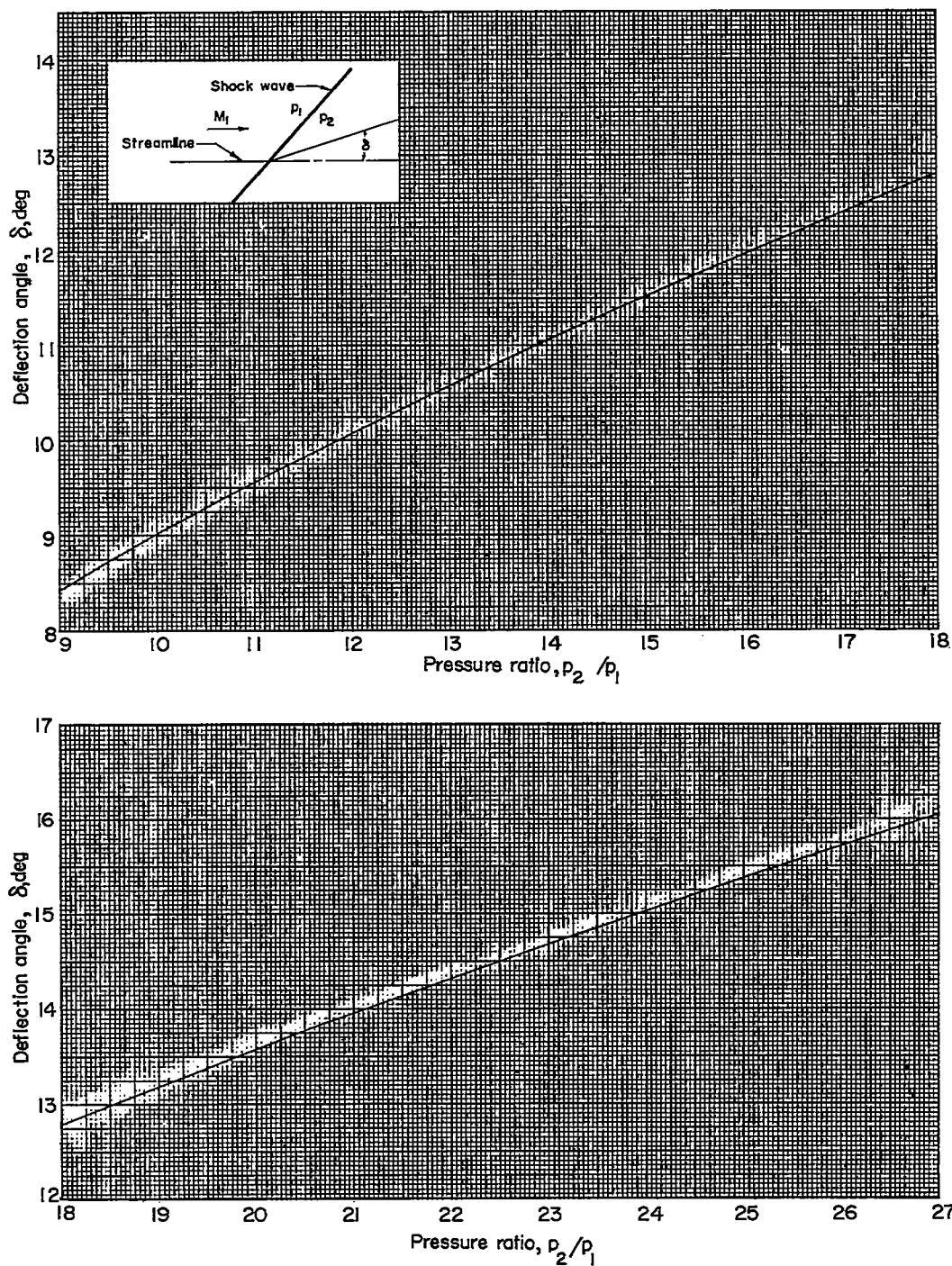
(c)  $\delta = 20^\circ$  to  $39^\circ$ .

Figure 5.- Concluded.



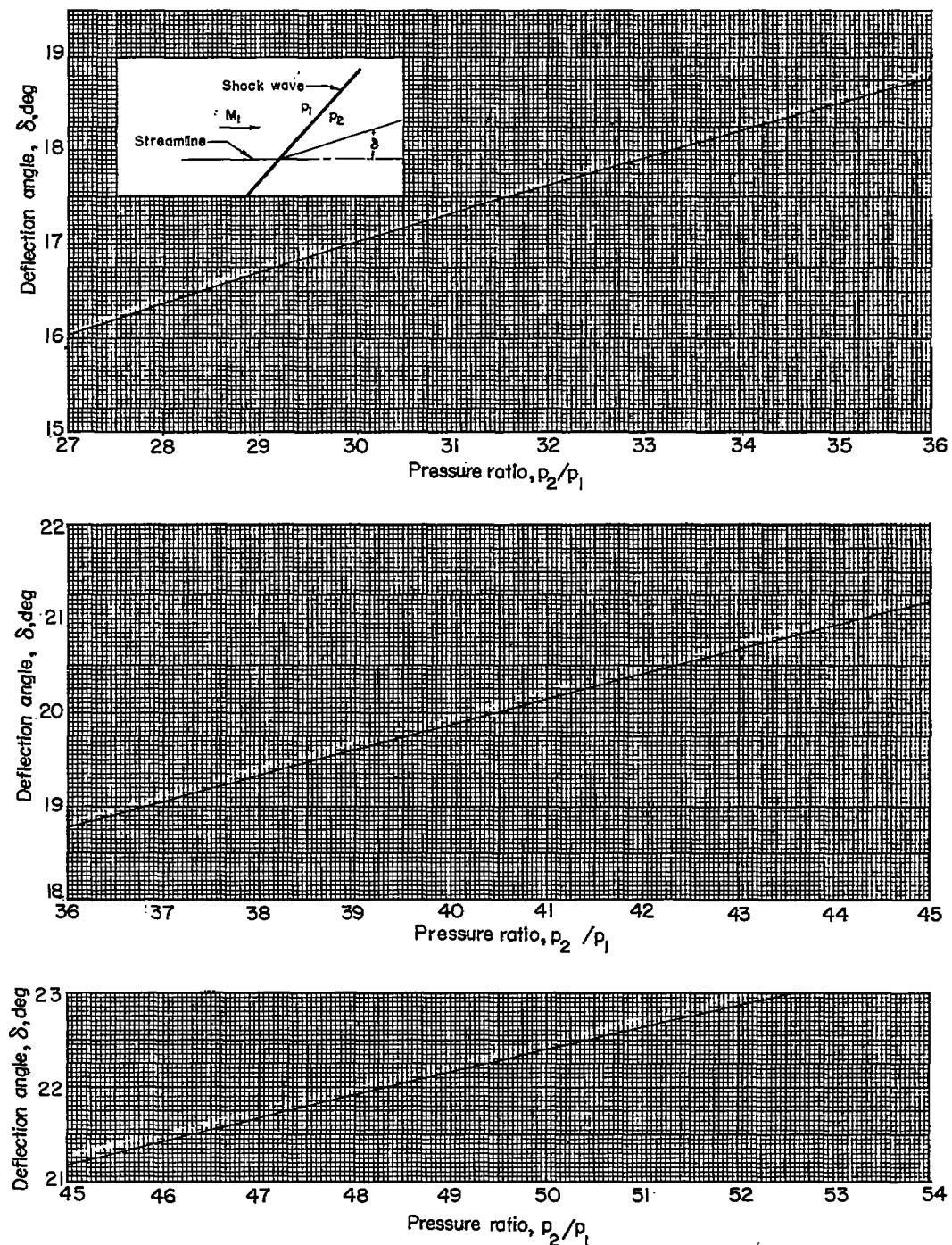
(a)  $p_2/p_1 = 0$  to 9.

Figure 6.- Variation of the pressure ratio through an oblique shock wave as a function of the angle of flow deviation.  $M_1 = 12$ ;  $\gamma = 5/3$ .



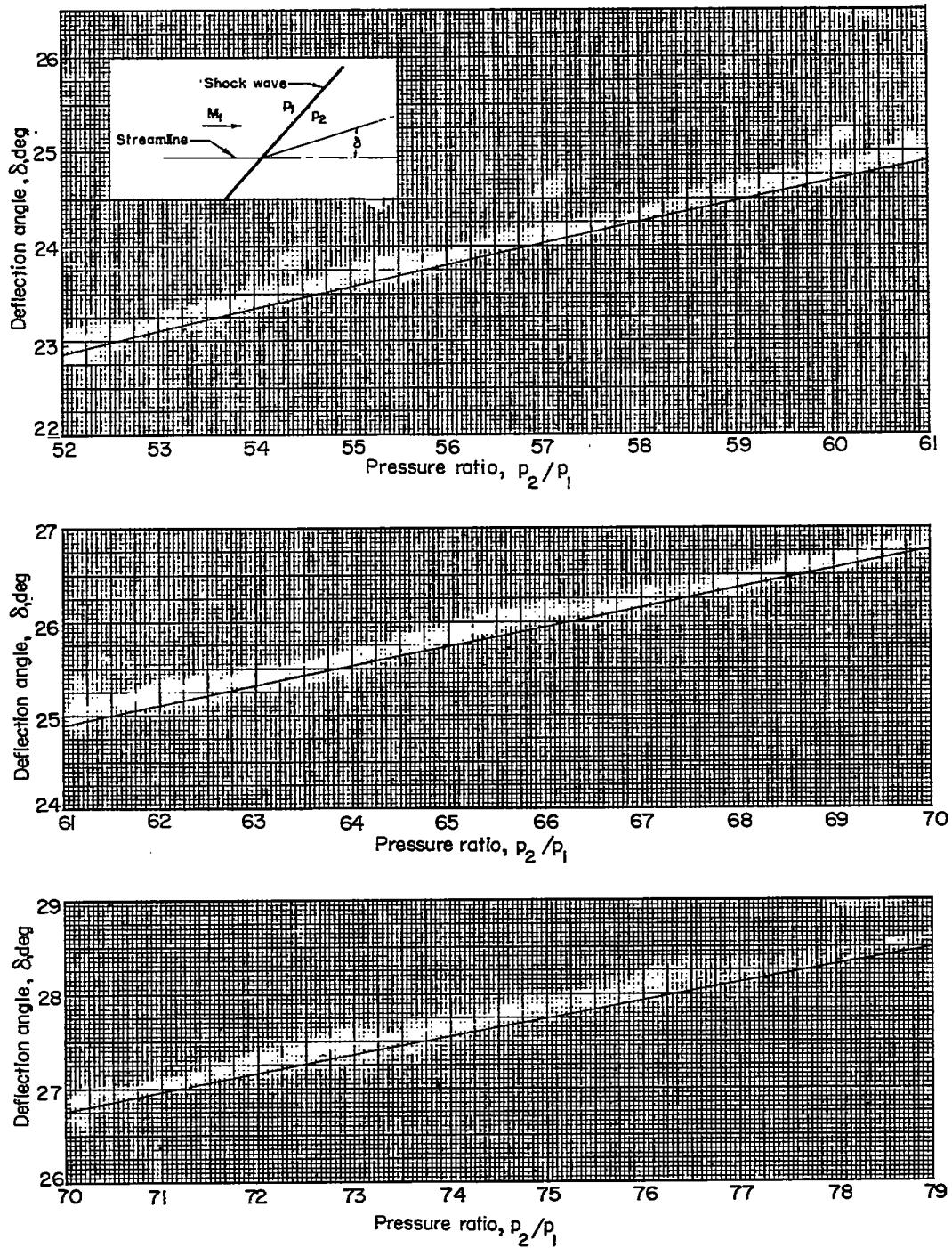
(b)  $p_2/p_1 = 9$  to 27.

Figure 6.- Continued.



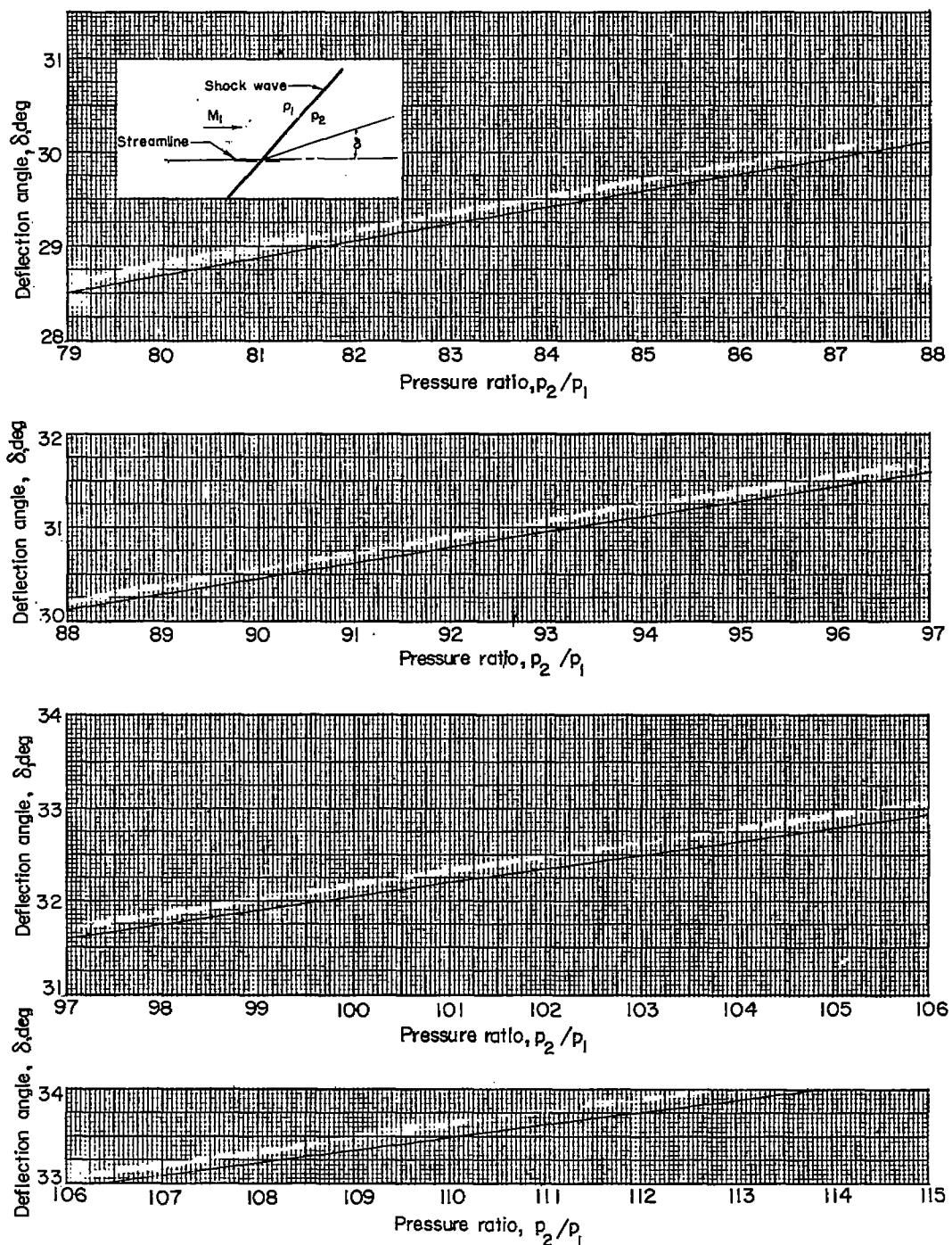
(c)  $p_2/p_1 = 27$  to  $54$ .

Figure 6.- Continued.



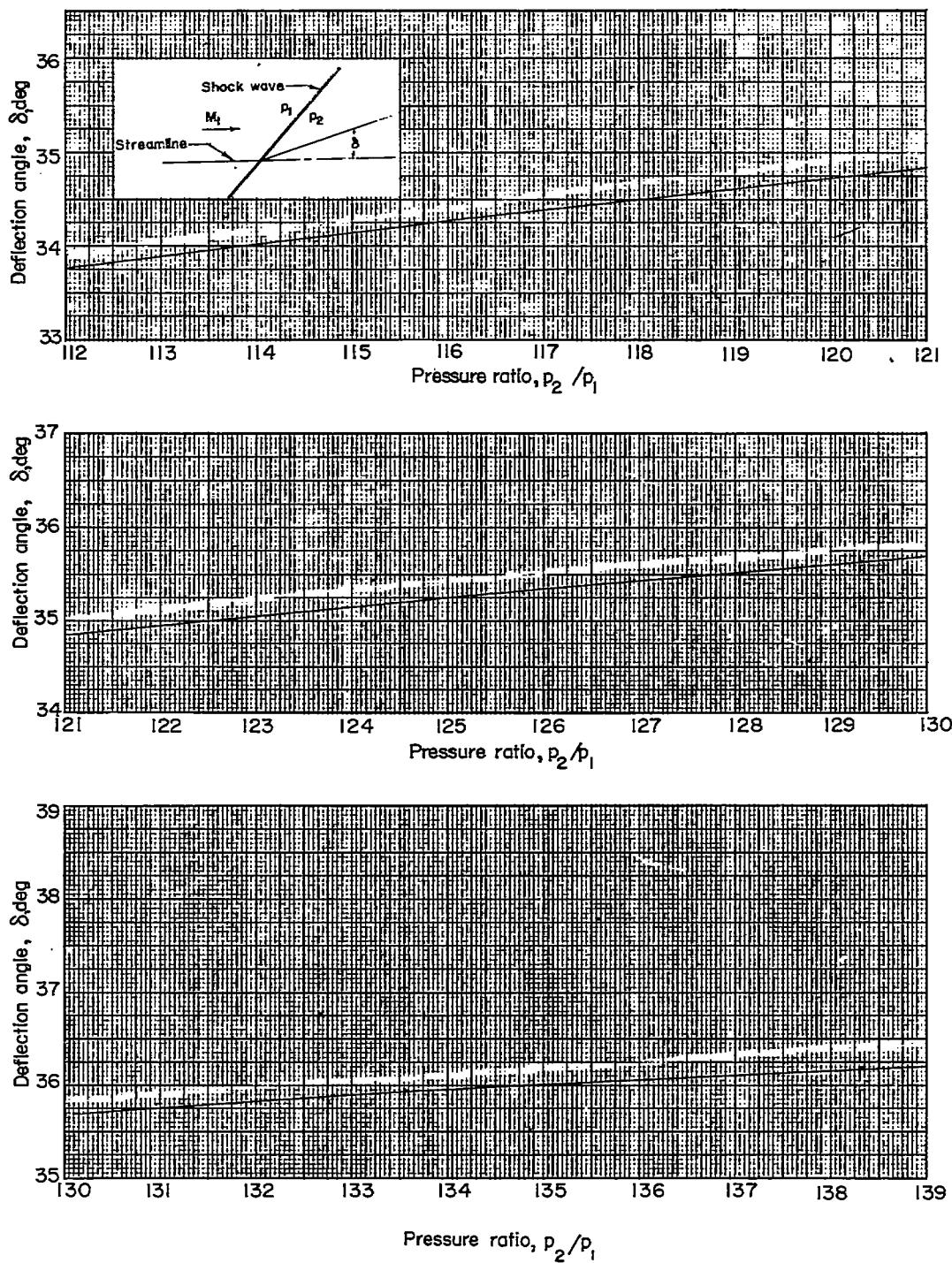
(d)  $p_2/p_1 = 54$  to 79.

Figure 6.- Continued.



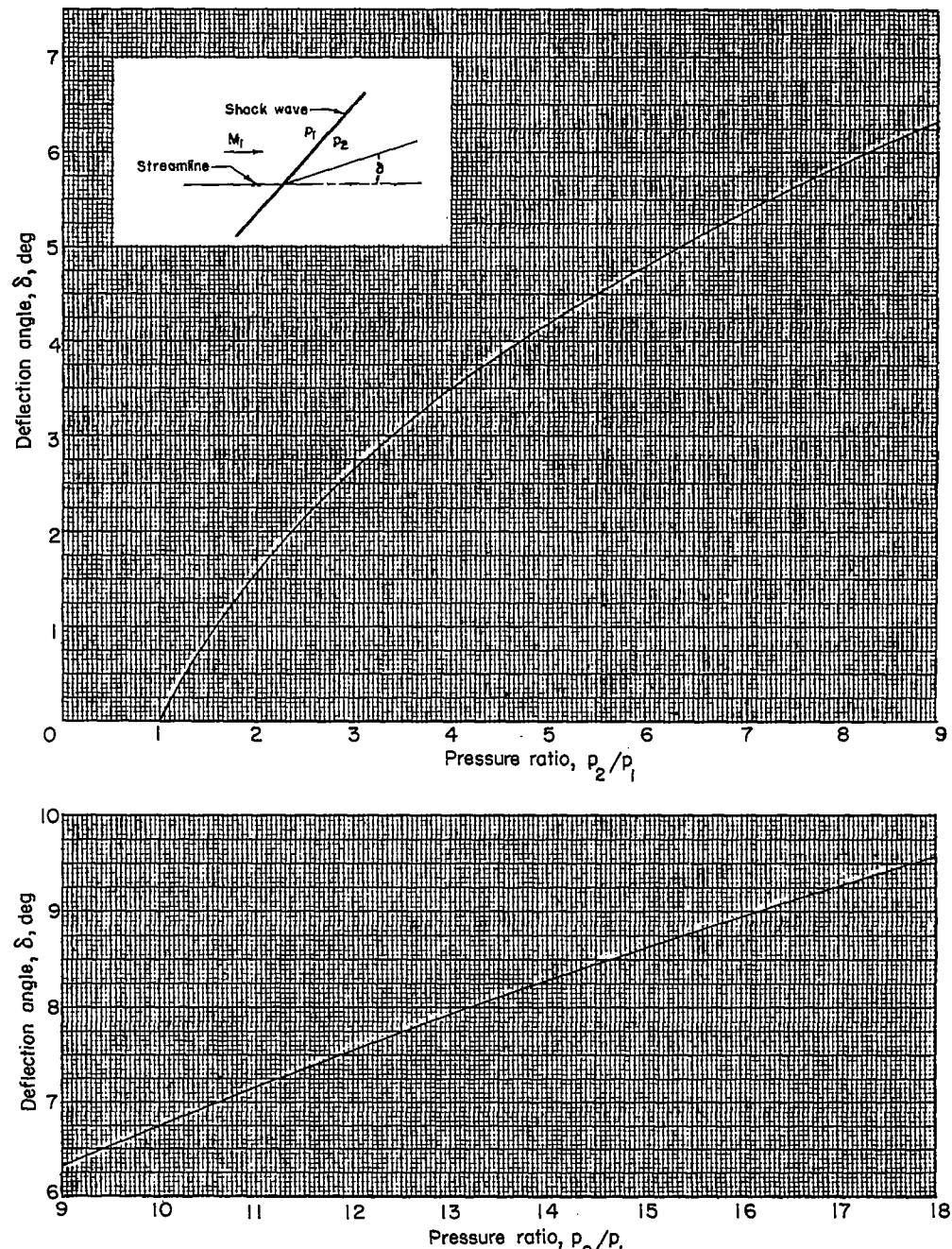
(e)  $p_2/p_1 = 79$  to 115.

Figure 6.- Continued.



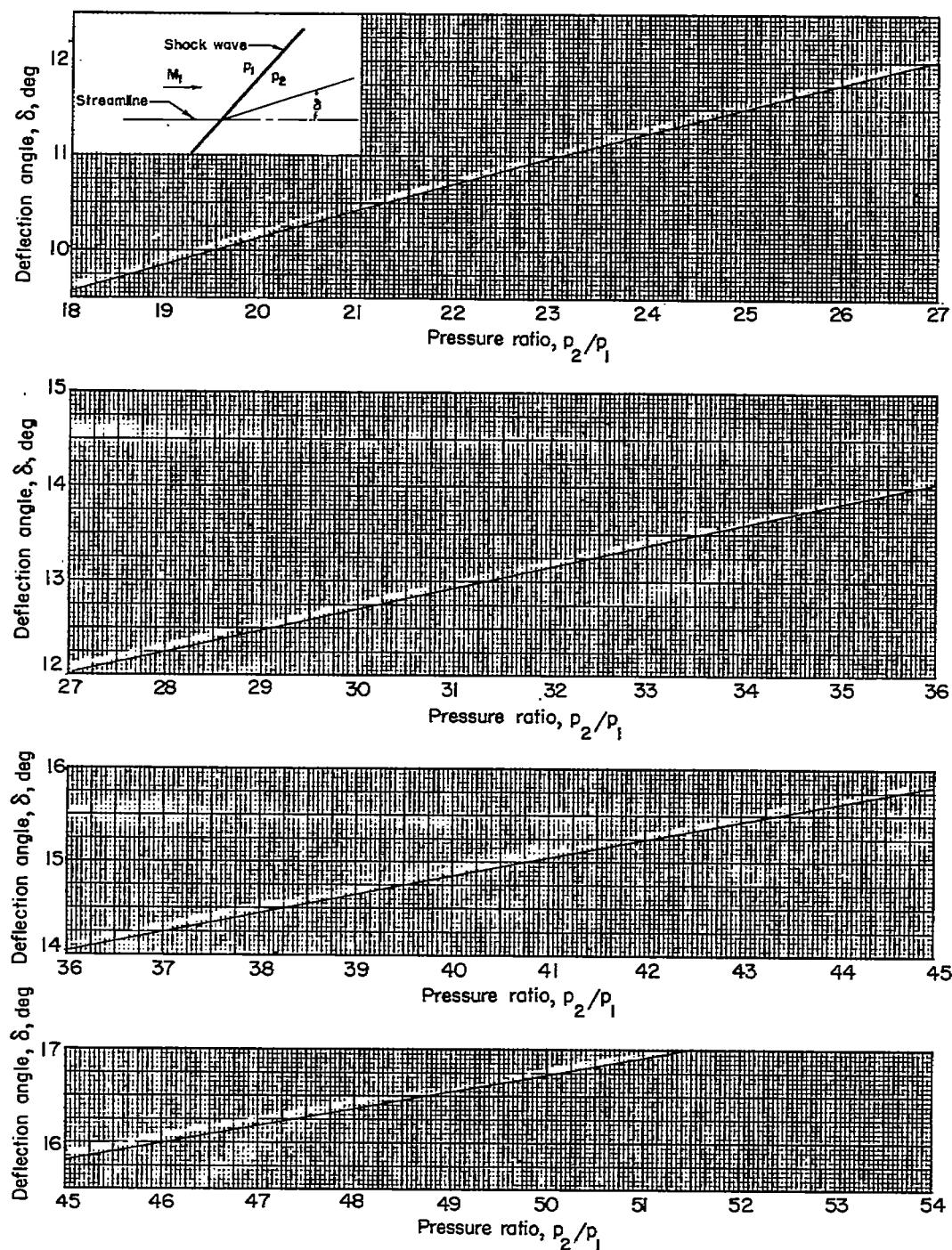
(f)  $p_2/p_1 = 1.12$  to  $1.39$ .

Figure 6.- Concluded.



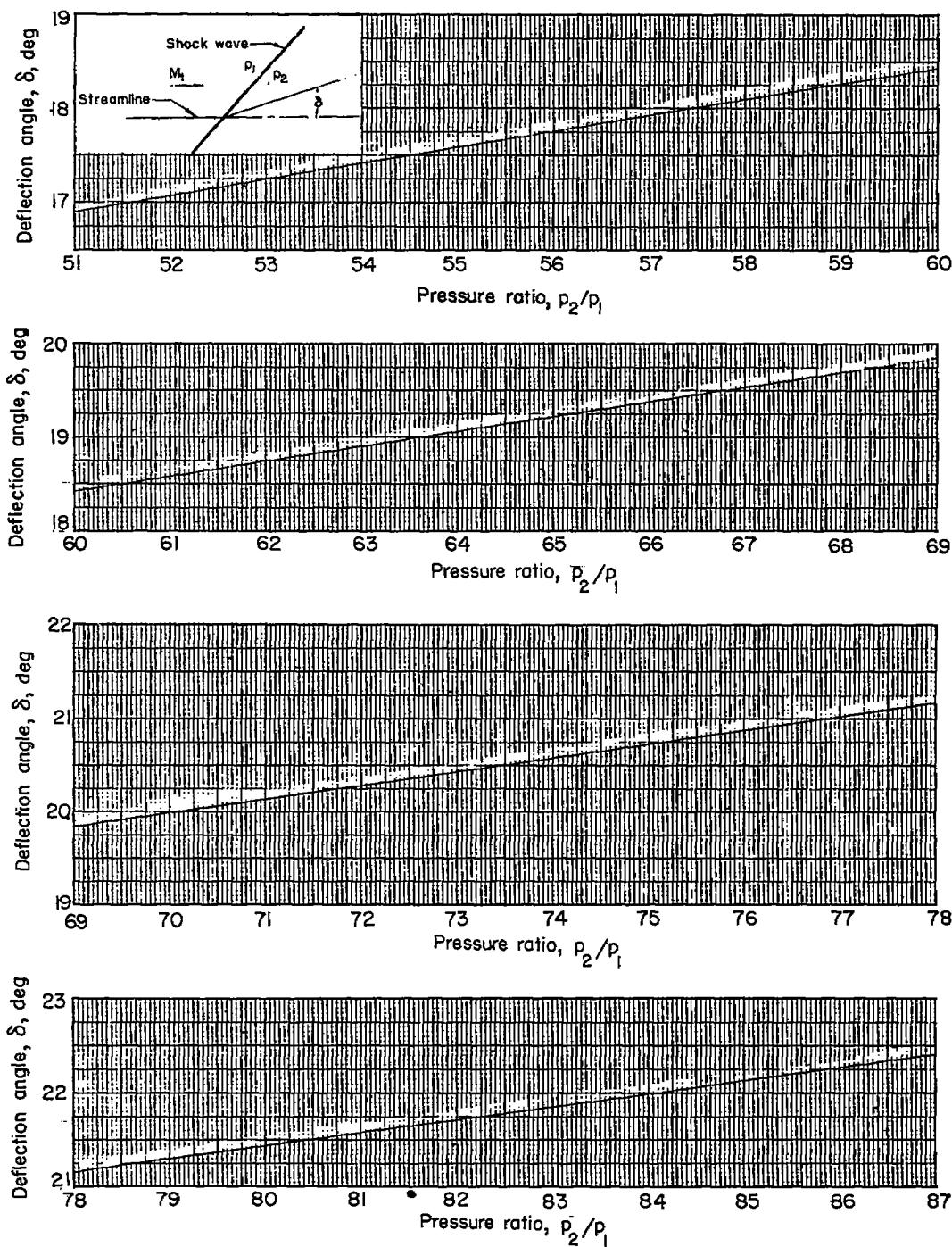
(a)  $p_2/p_1 = 0$  to 18.

Figure 7.- Variation of the pressure ratio through an oblique shock wave as a function of the angle of flow deviation.  $M_1 = 16$ ;  $\gamma = 5/3$ .



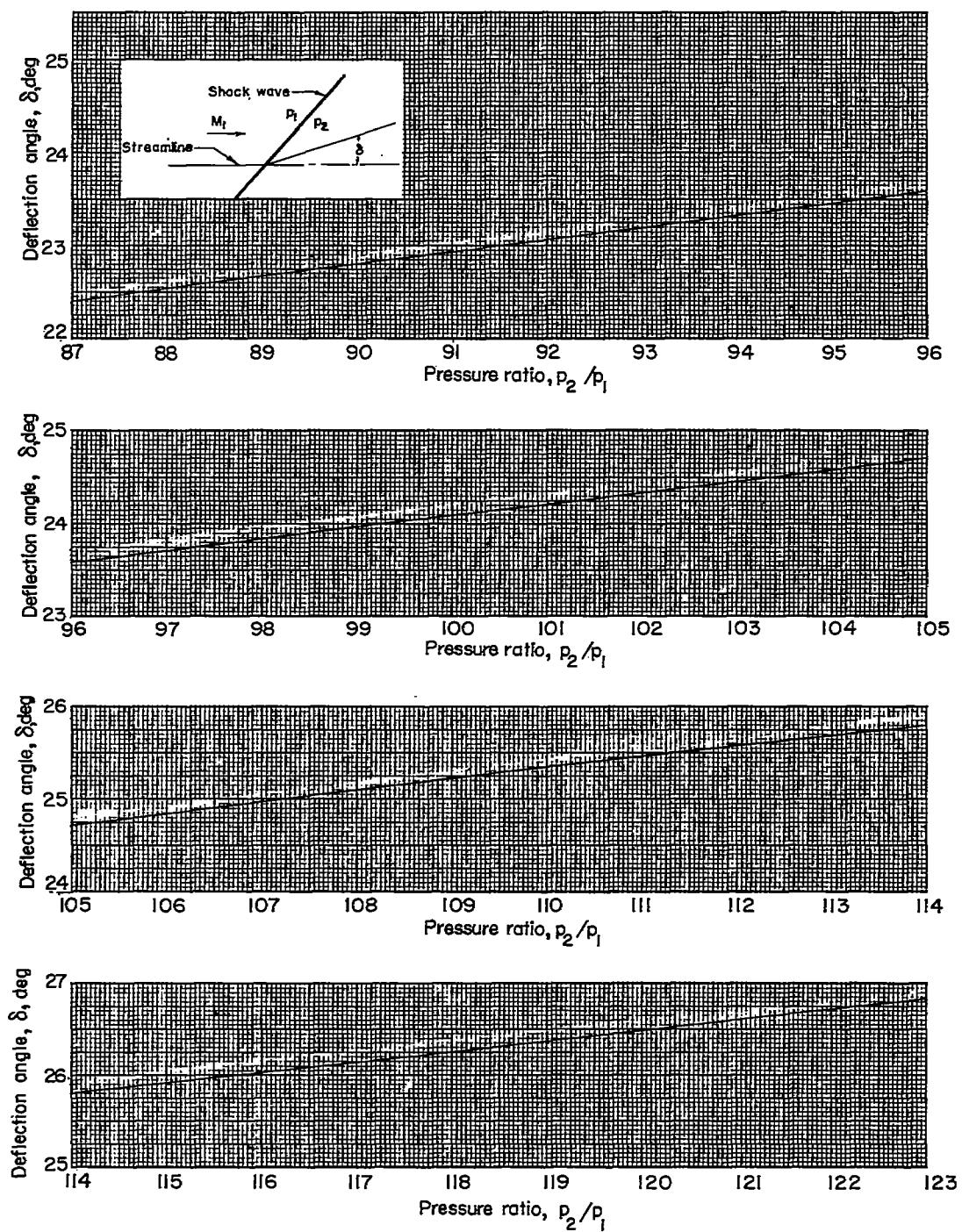
(b)  $p_2/p_1 = 18$  to  $54$ .

Figure 7.- Continued.



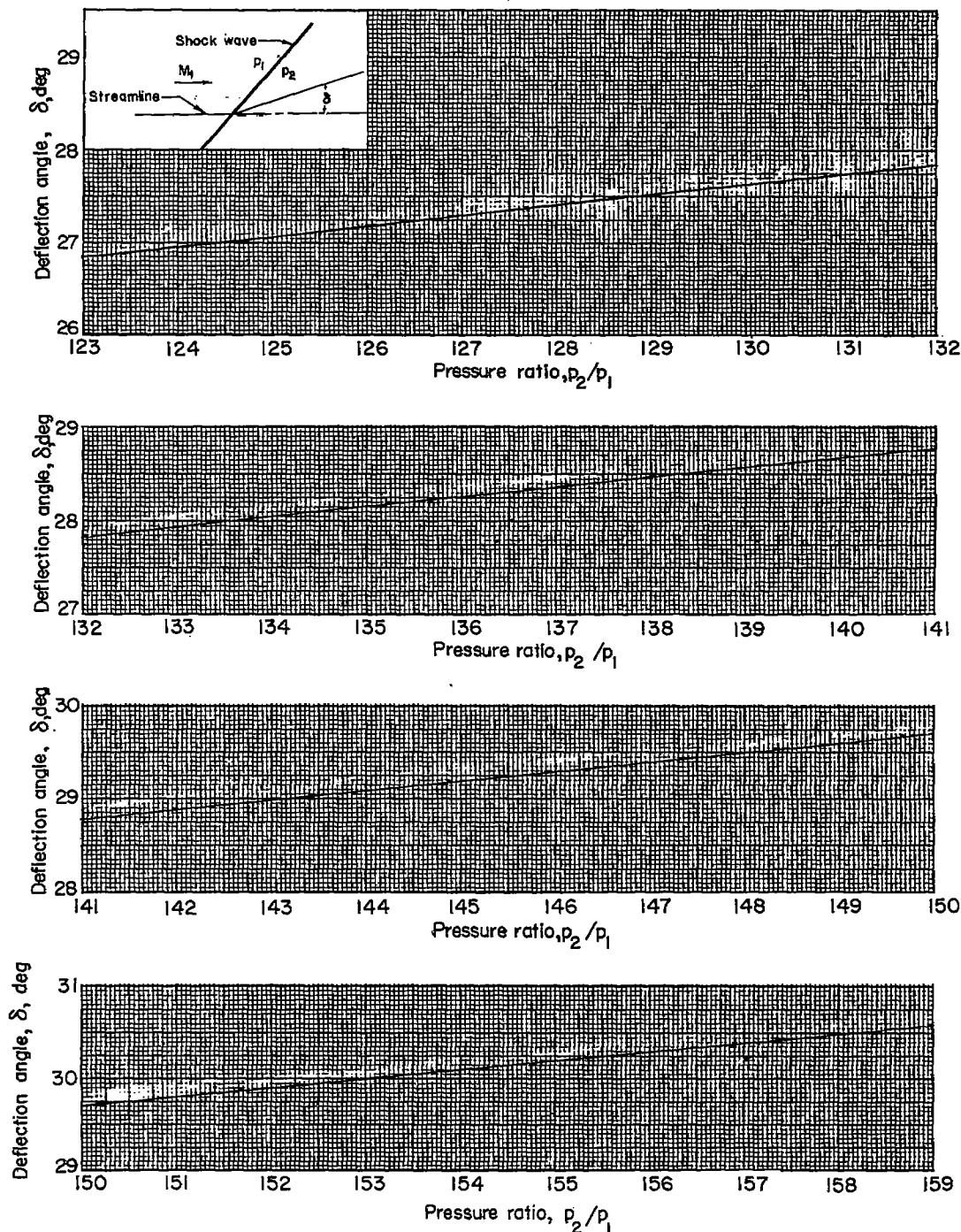
(c)  $p_2/p_1 = 51$  to  $87$ .

Figure 7.- Continued.



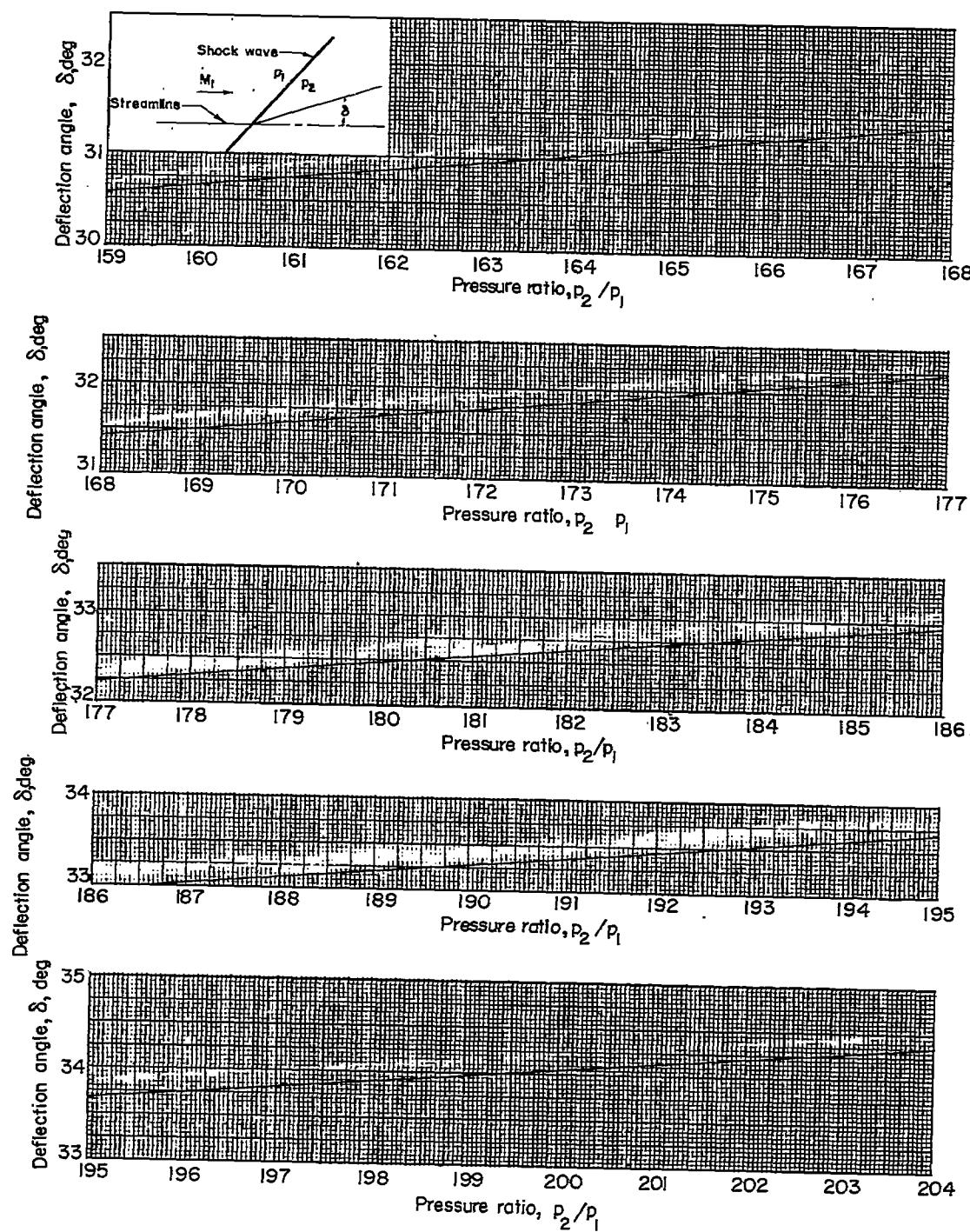
(d)  $p_2/p_1 = 87$  to 123.

Figure 7.- Continued.



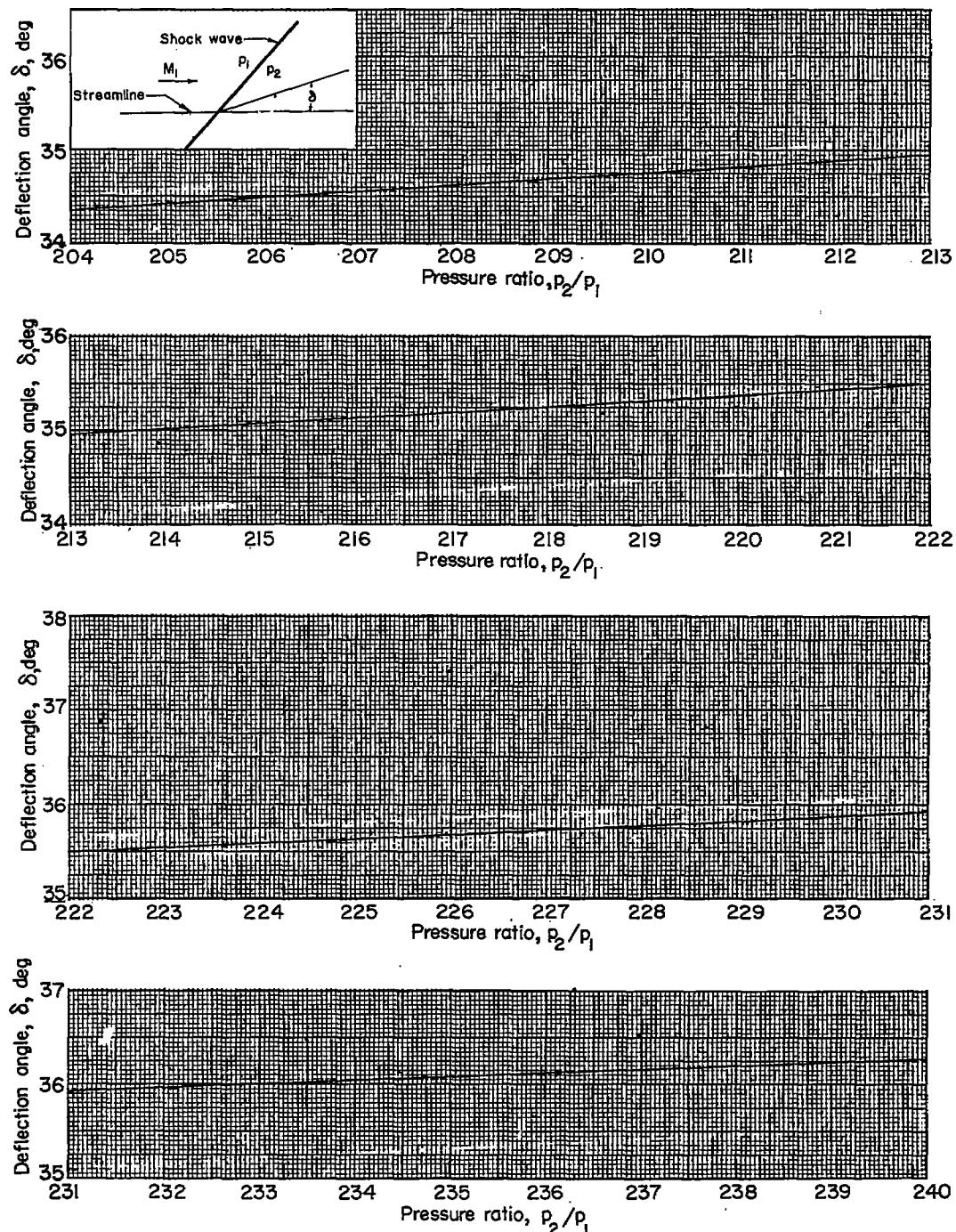
(e)  $p_2/p_1 = 1.23$  to 1.59.

Figure 7.- Continued.



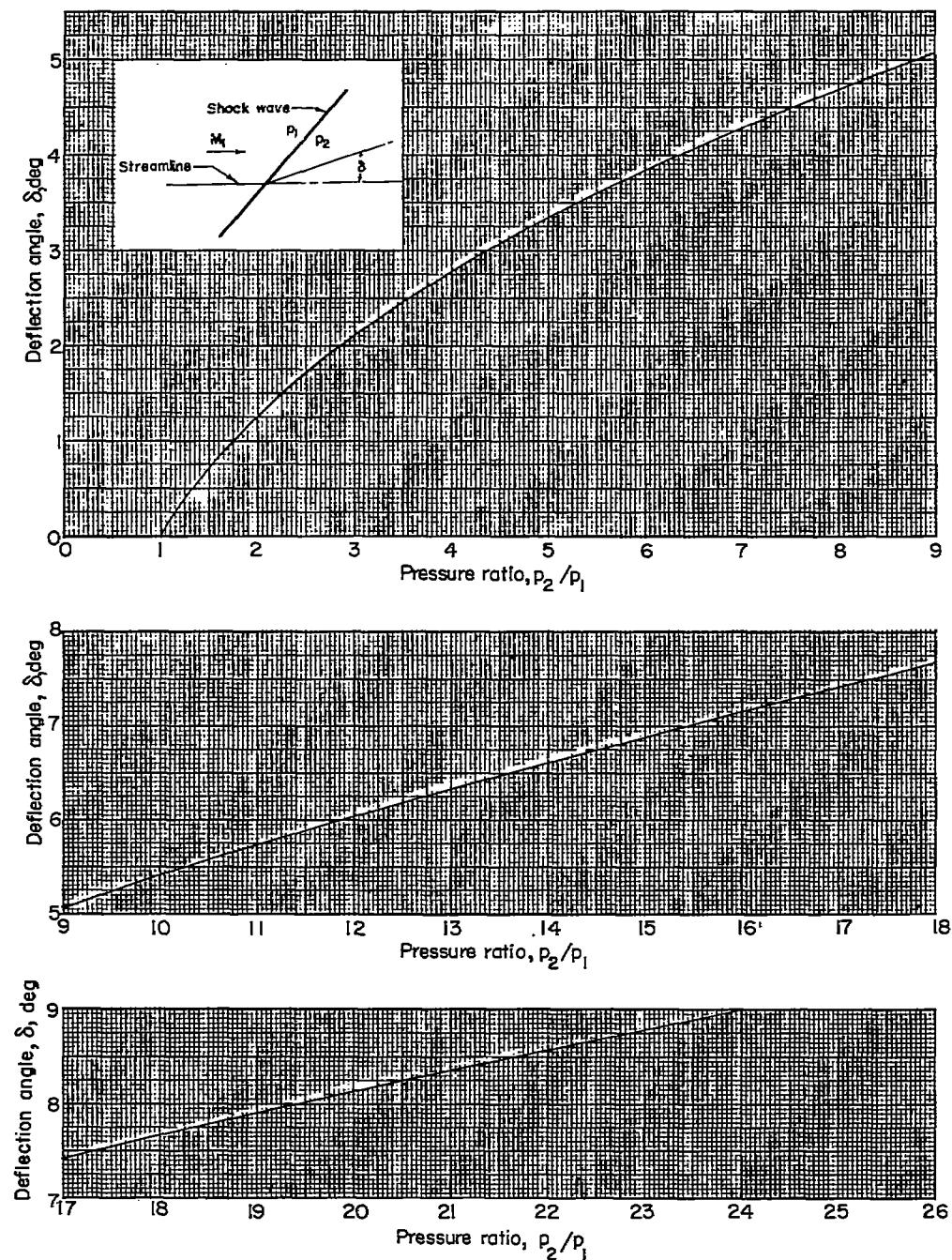
(f)  $p_2/p_1 = 159$  to  $204$ .

Figure 7.- Continued.



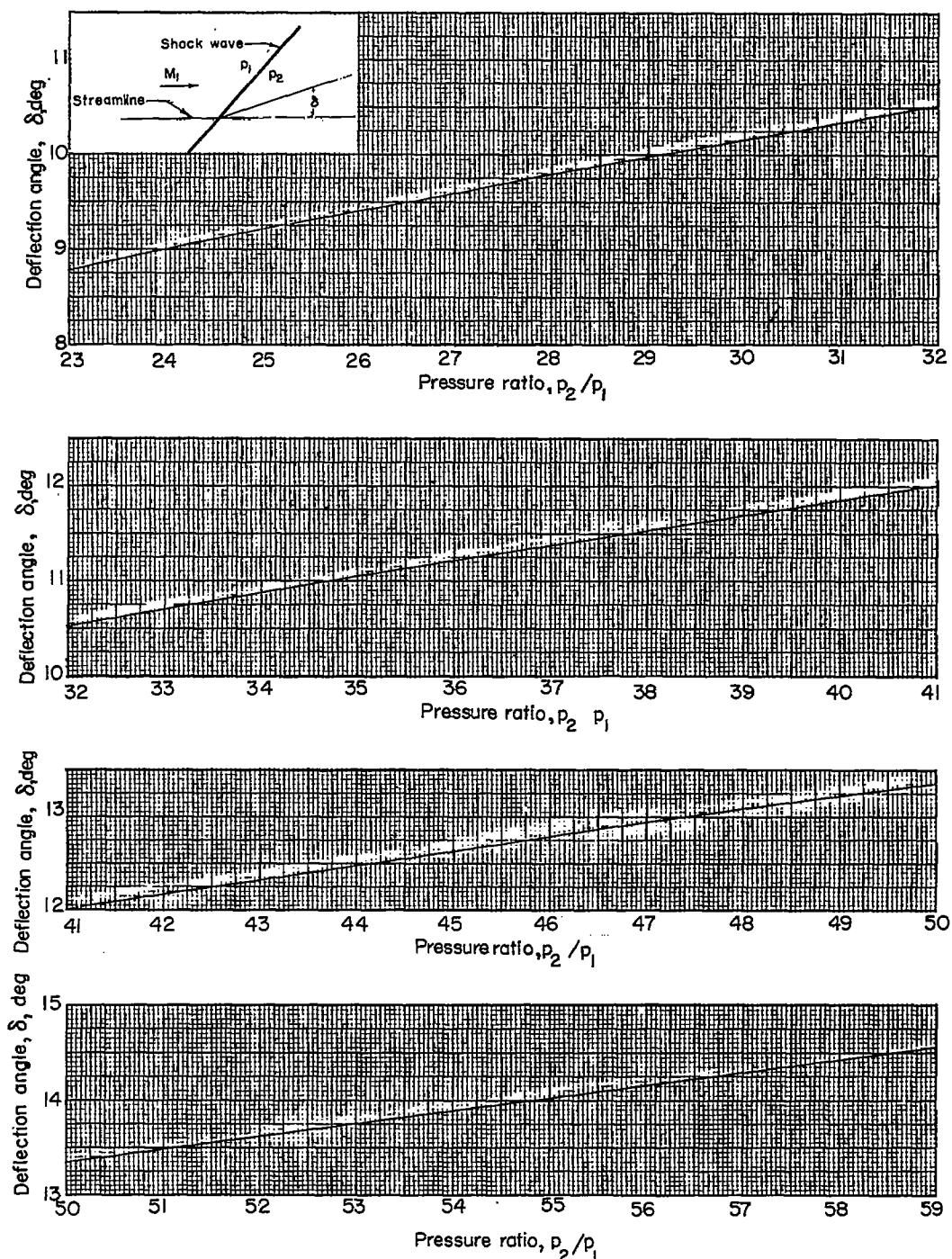
(g)  $p_2/p_1 = 204$  to 240.

Figure 7.- Concluded.



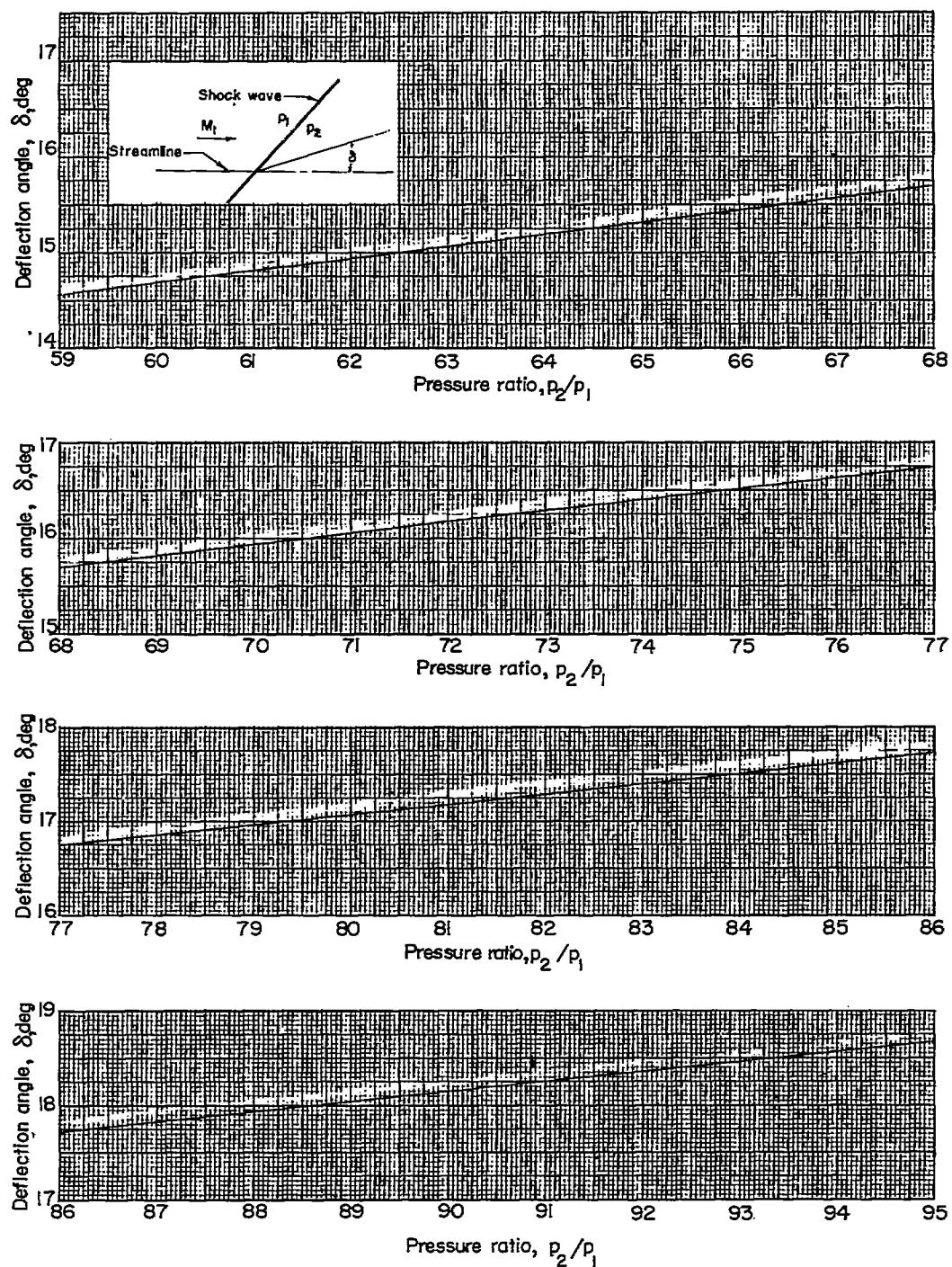
(a)  $p_2/p_1 = 0$  to 26.

Figure 8.- Variation of the pressure ratio through an oblique shock wave as a function of the angle of flow deviation.  $M_1 = 20$ ;  $\gamma = 5/3$ .



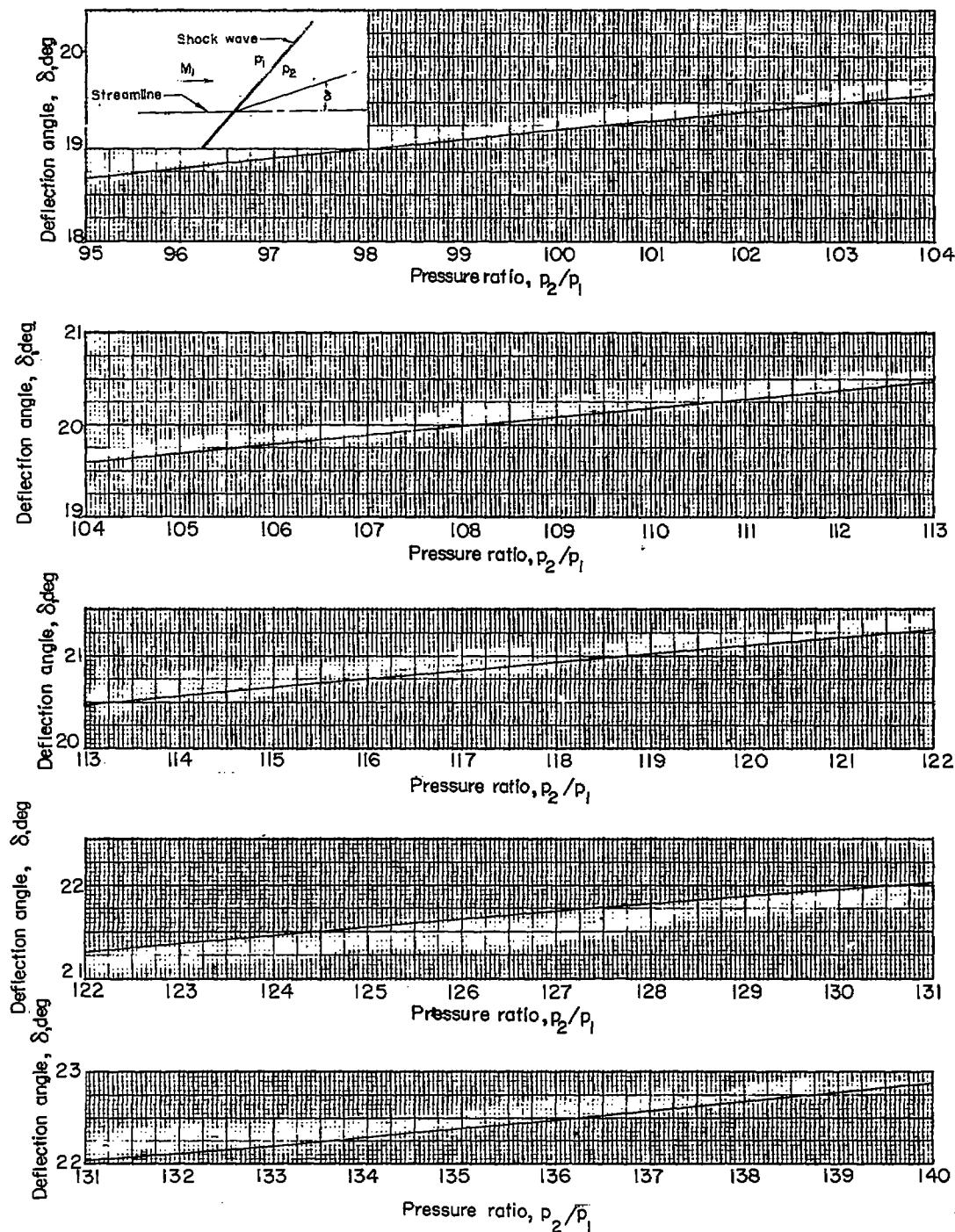
(b)  $p_2/p_1 = 23$  to 59.

Figure 8.- Continued.



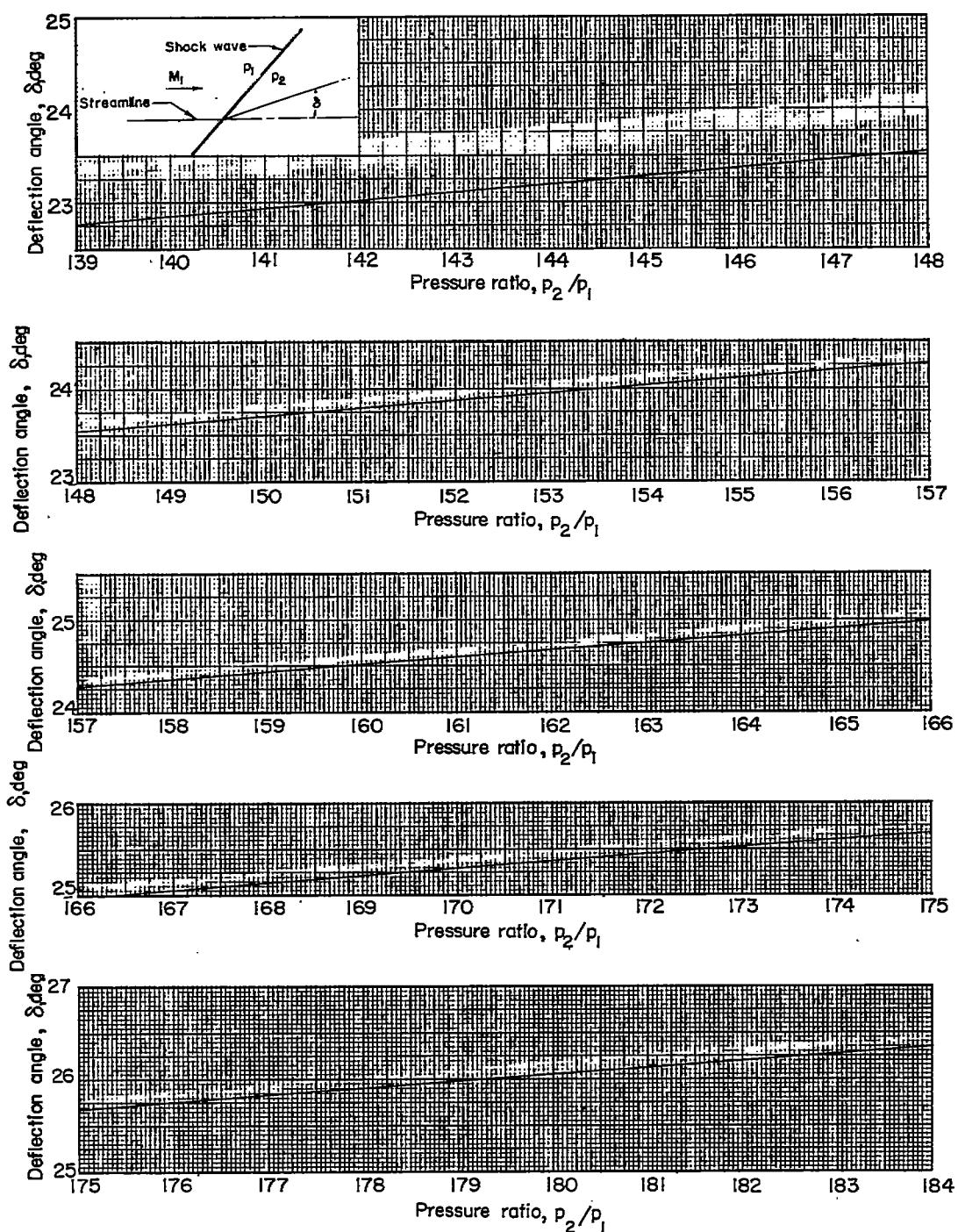
(c)  $p_2/p_1 = 59$  to 95.

Figure 8.- Continued.



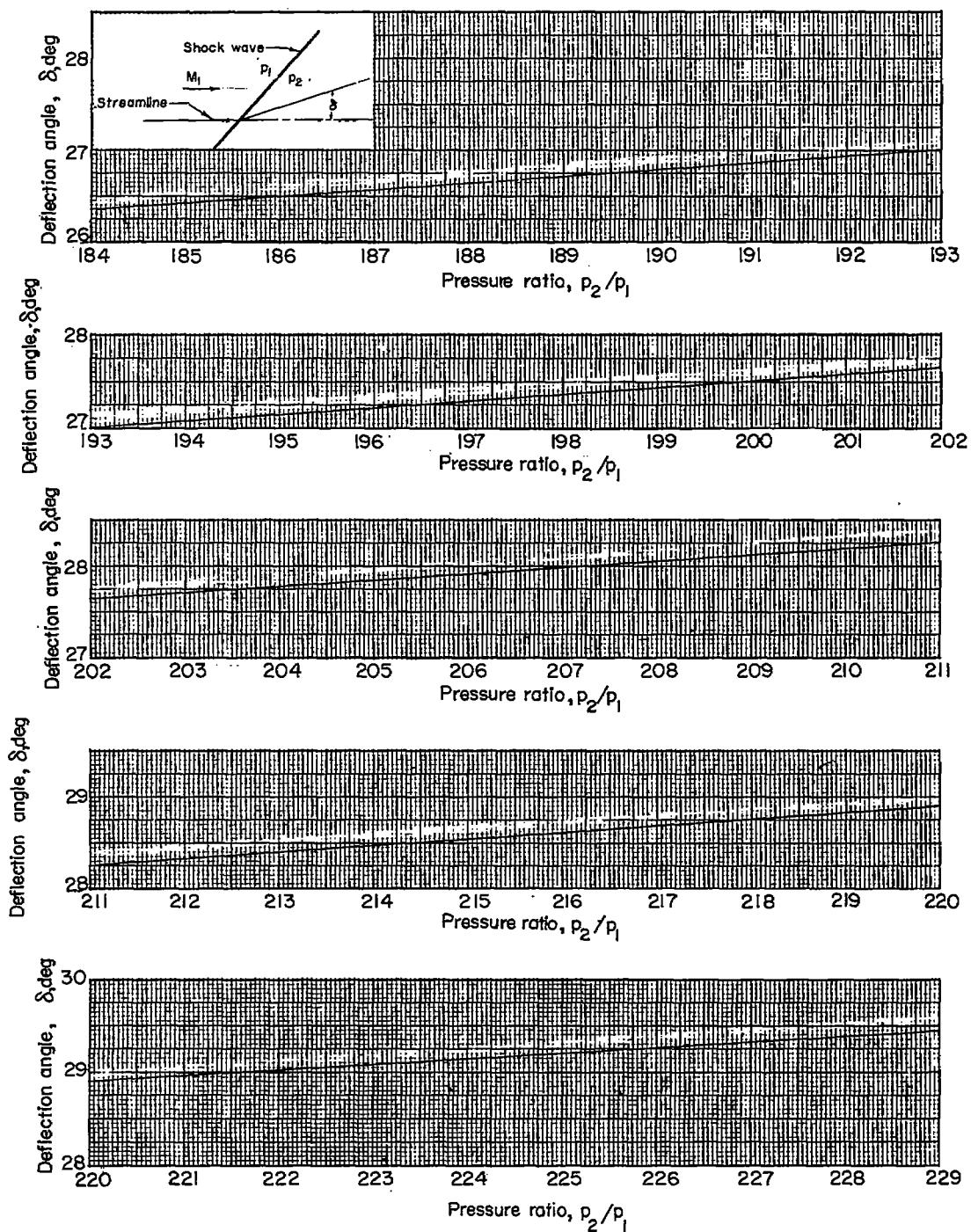
(d)  $p_2/p_1 = 95$  to 140.

Figure 8.- Continued.



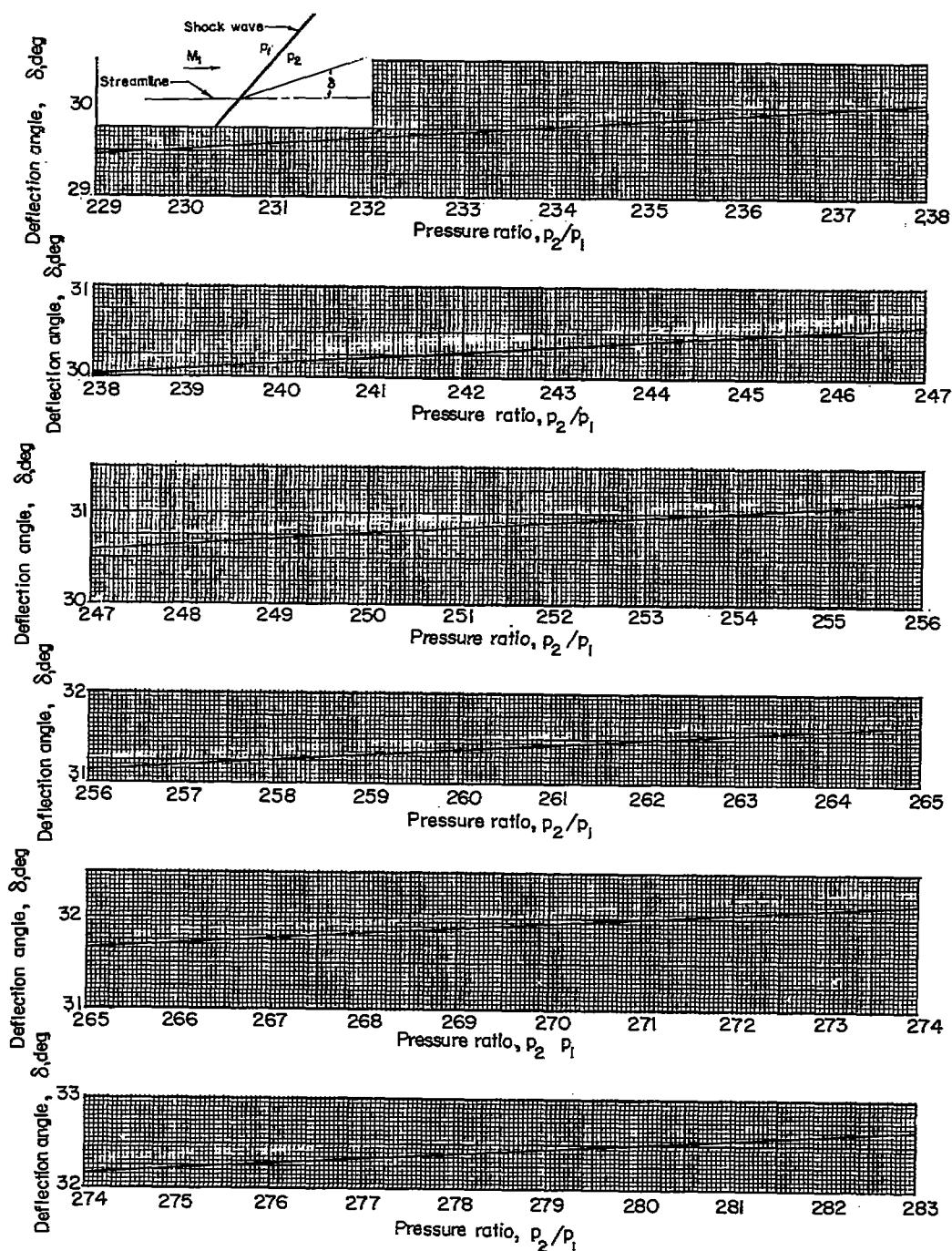
(e)  $p_2/p_1 = 139$  to 184.

Figure, 8.- Continued.



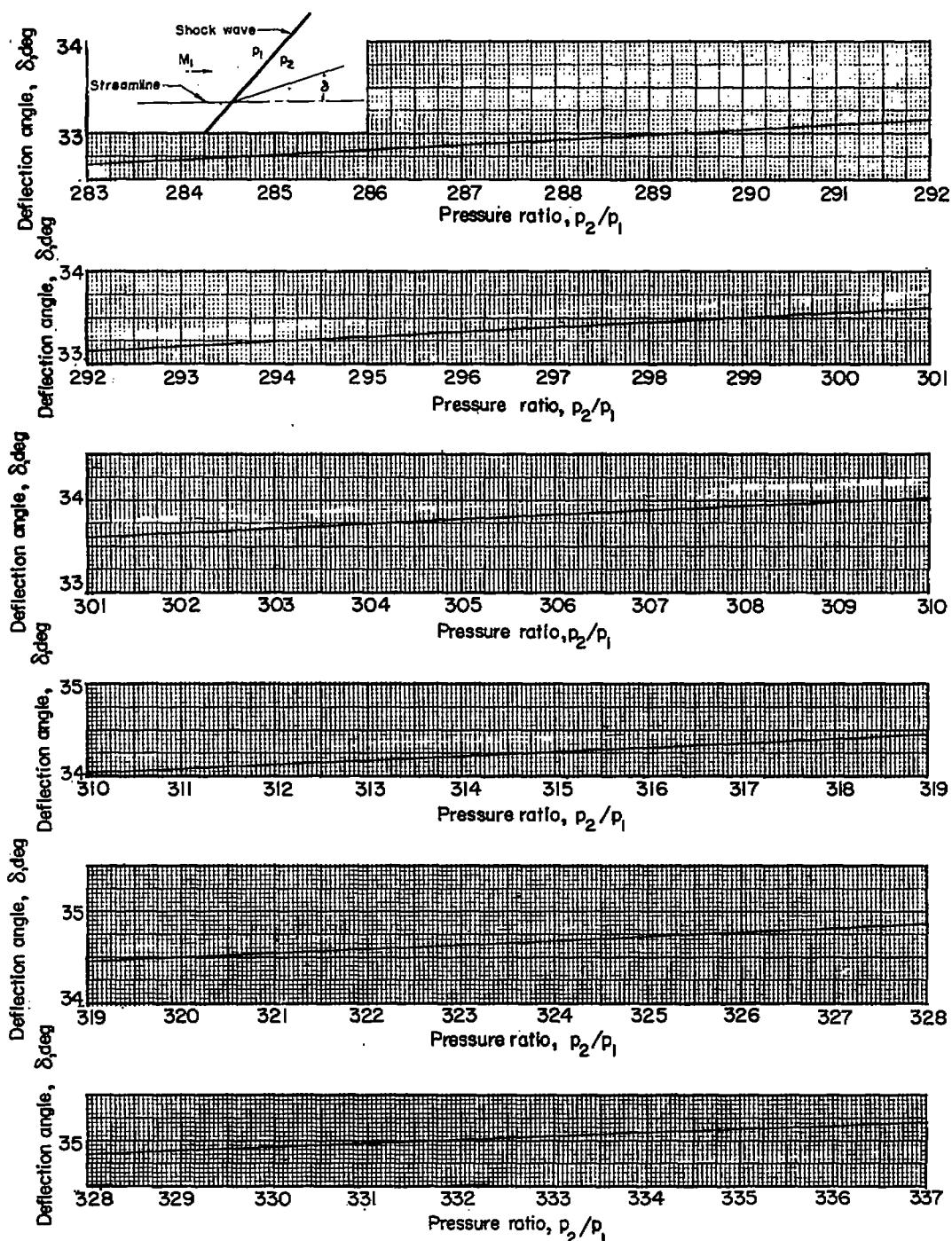
(f)  $p_2/p_1 = 184$  to 229.

Figure 8.- Continued.



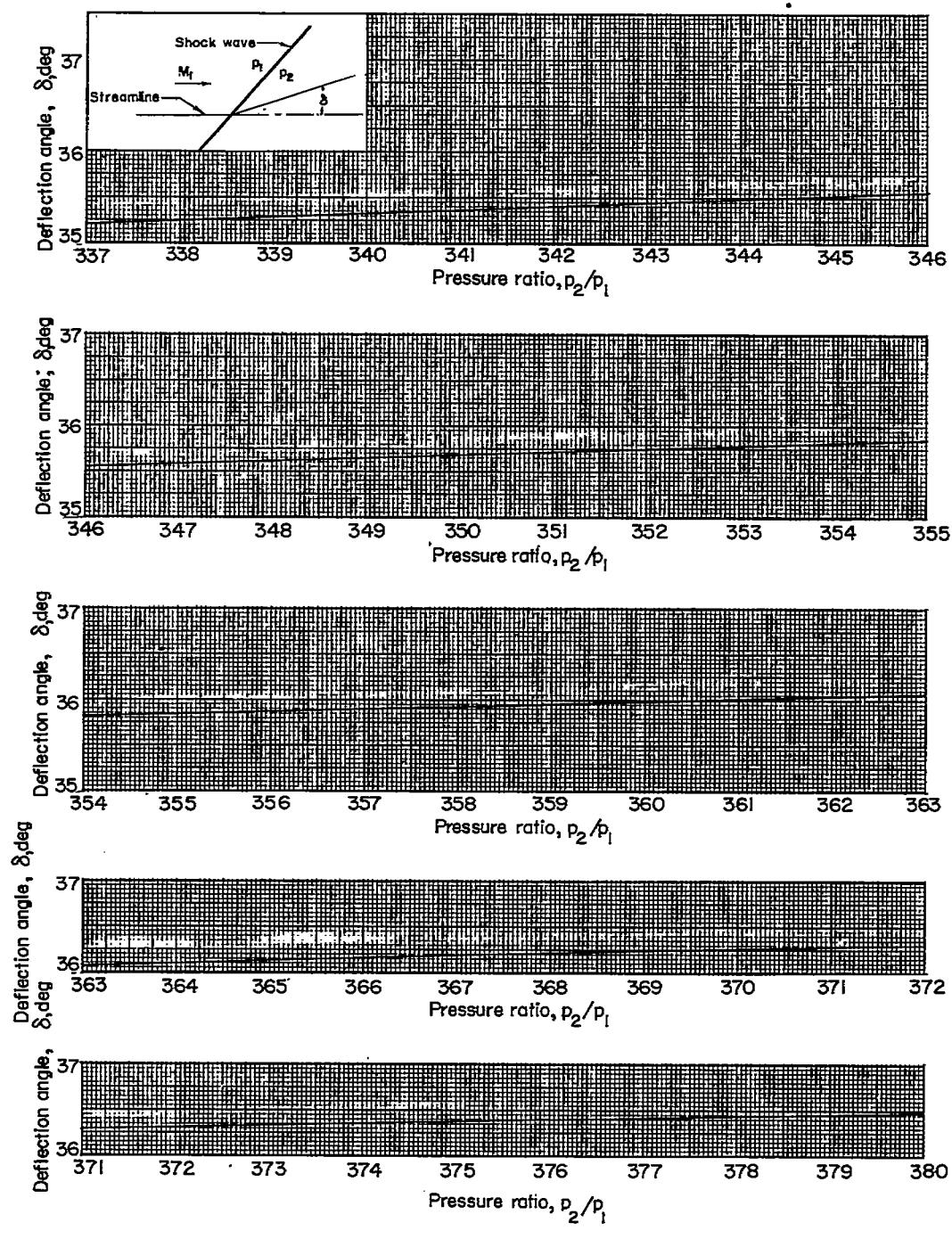
(g)  $p_2/p_1 = 229$  to 283.

Figure 8.- Continued.



(h)  $p_2/p_1 = 283$  to 337.

Figure 8.- Continued.



(i)  $p_2/p_1 = 337$  to 380.

Figure 8.- Concluded.

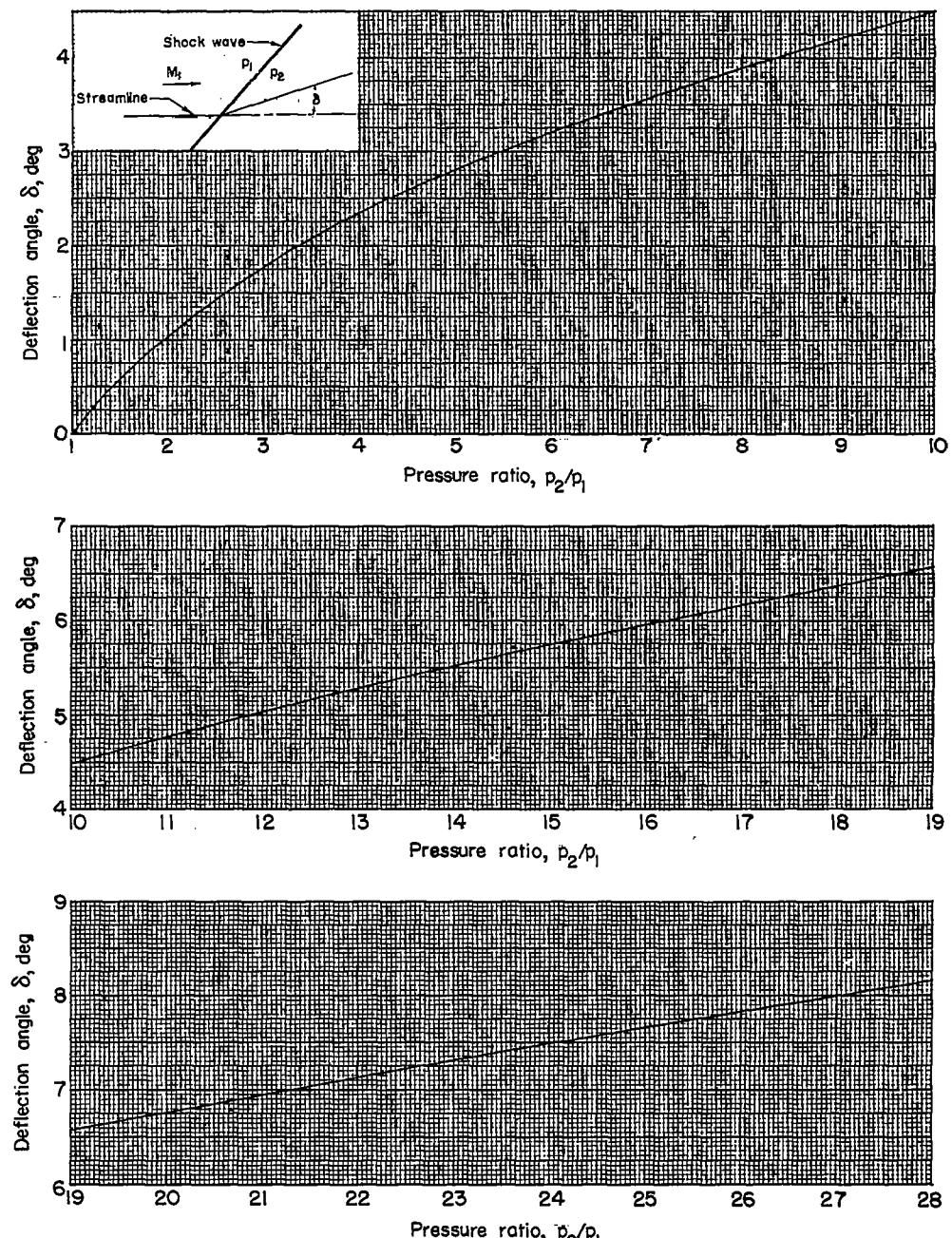
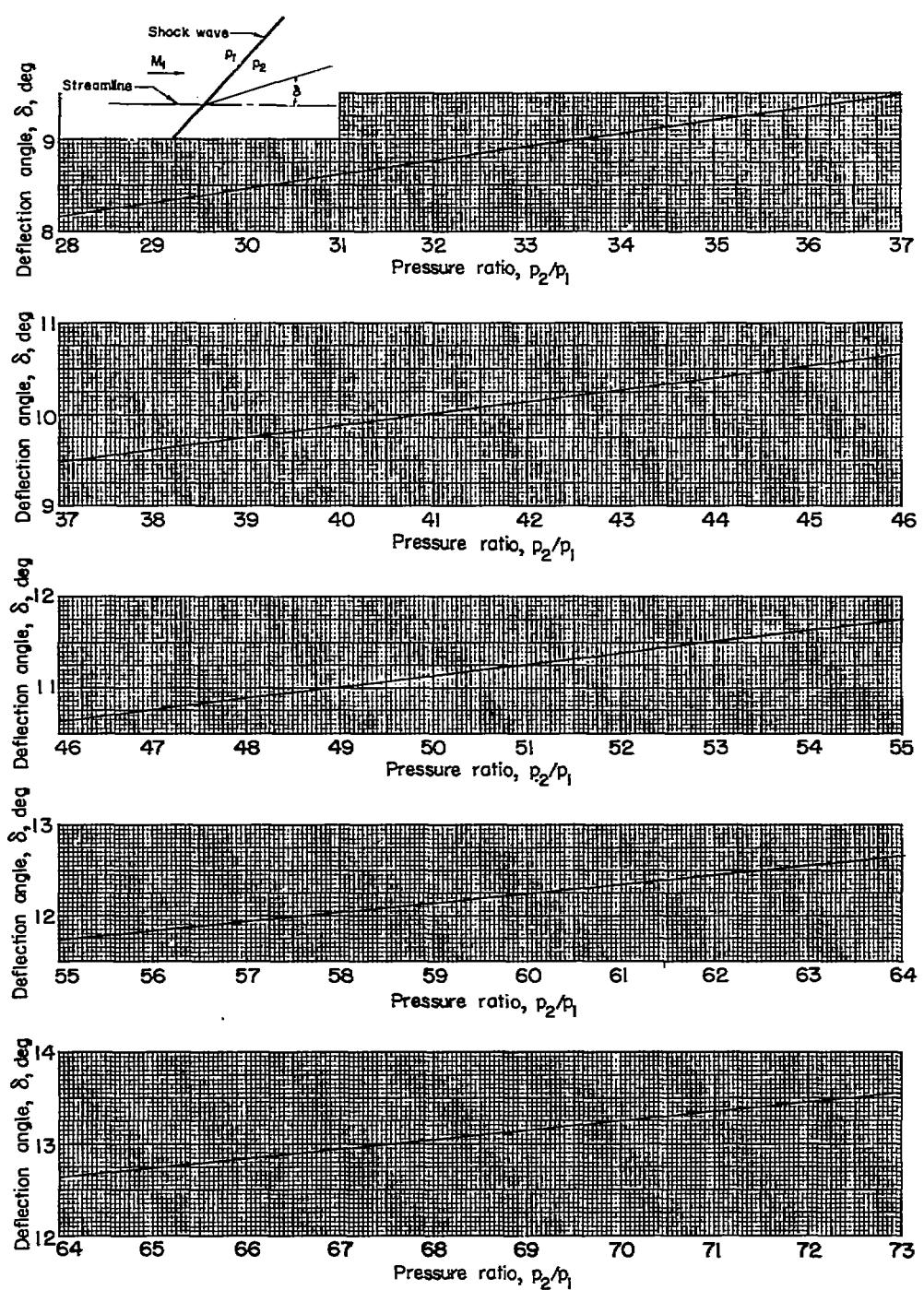
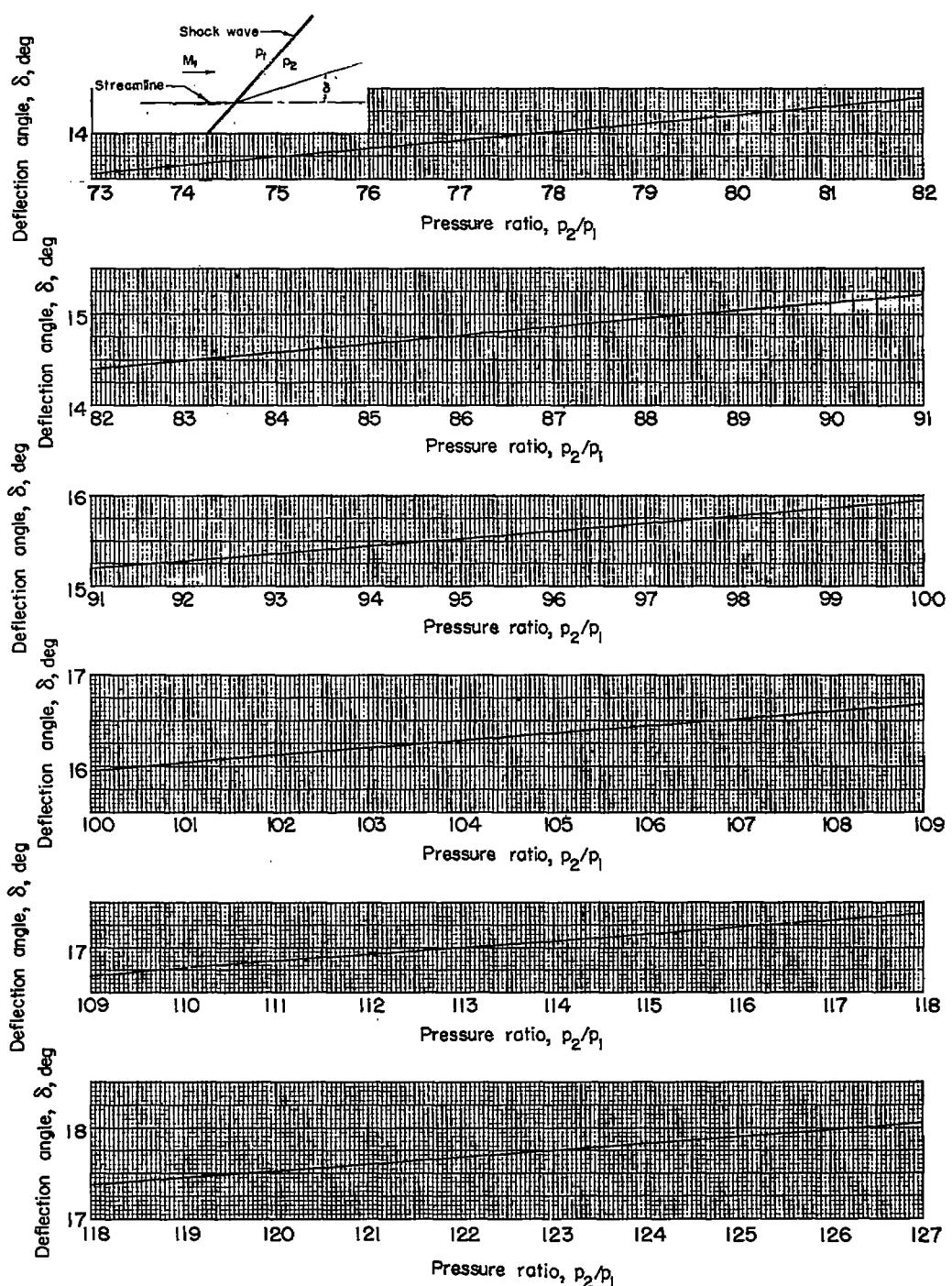
(a)  $p_2/p_1 = 1$  to 28.

Figure 9.- Variation of the pressure ratio through an oblique shock wave as a function of wedge angle of flow deviation.  $M_1 = 24$ ;  $\gamma = 5/3$ .



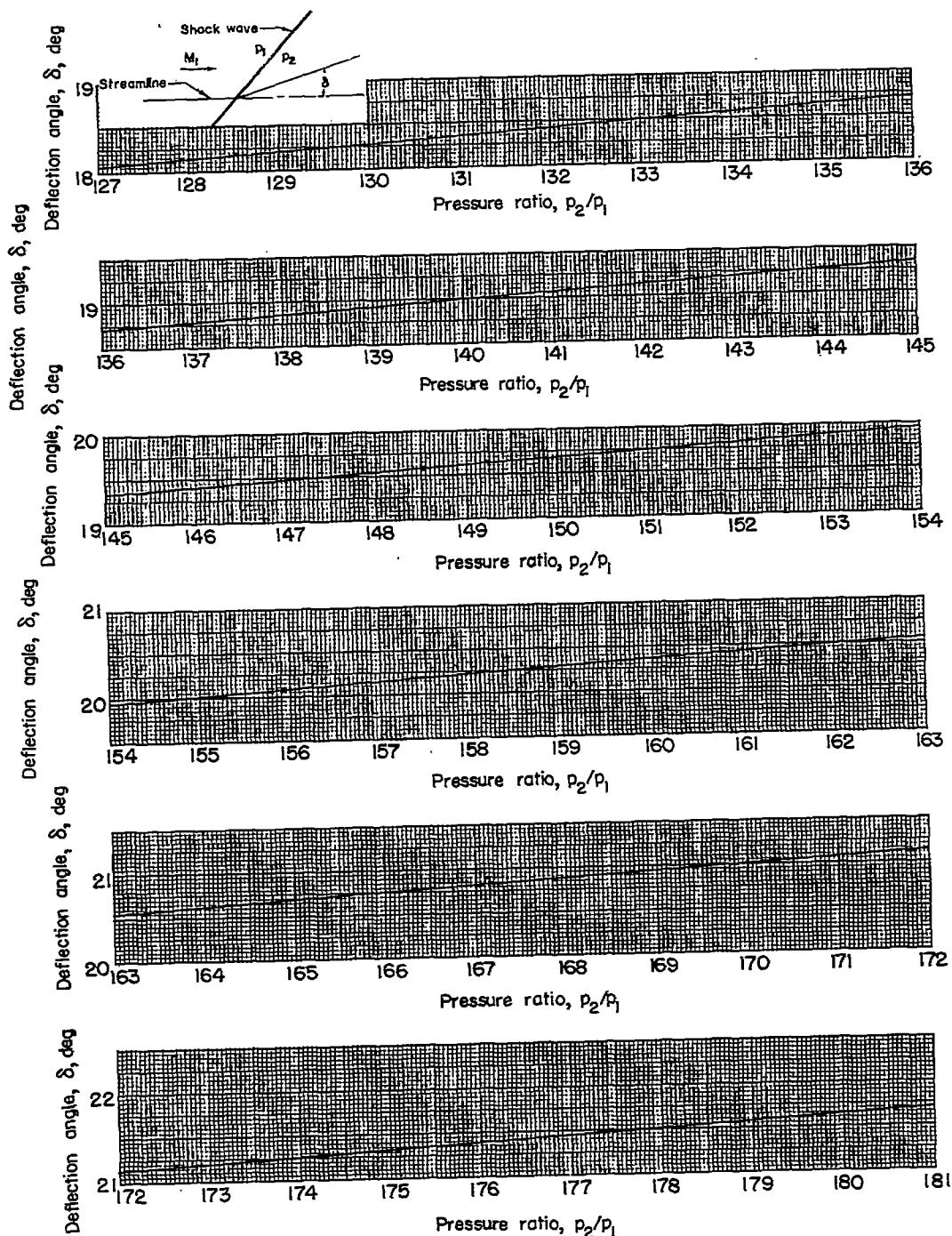
(b)  $p_2/p_1 = 28$  to 73.

Figure 9.- Continued.



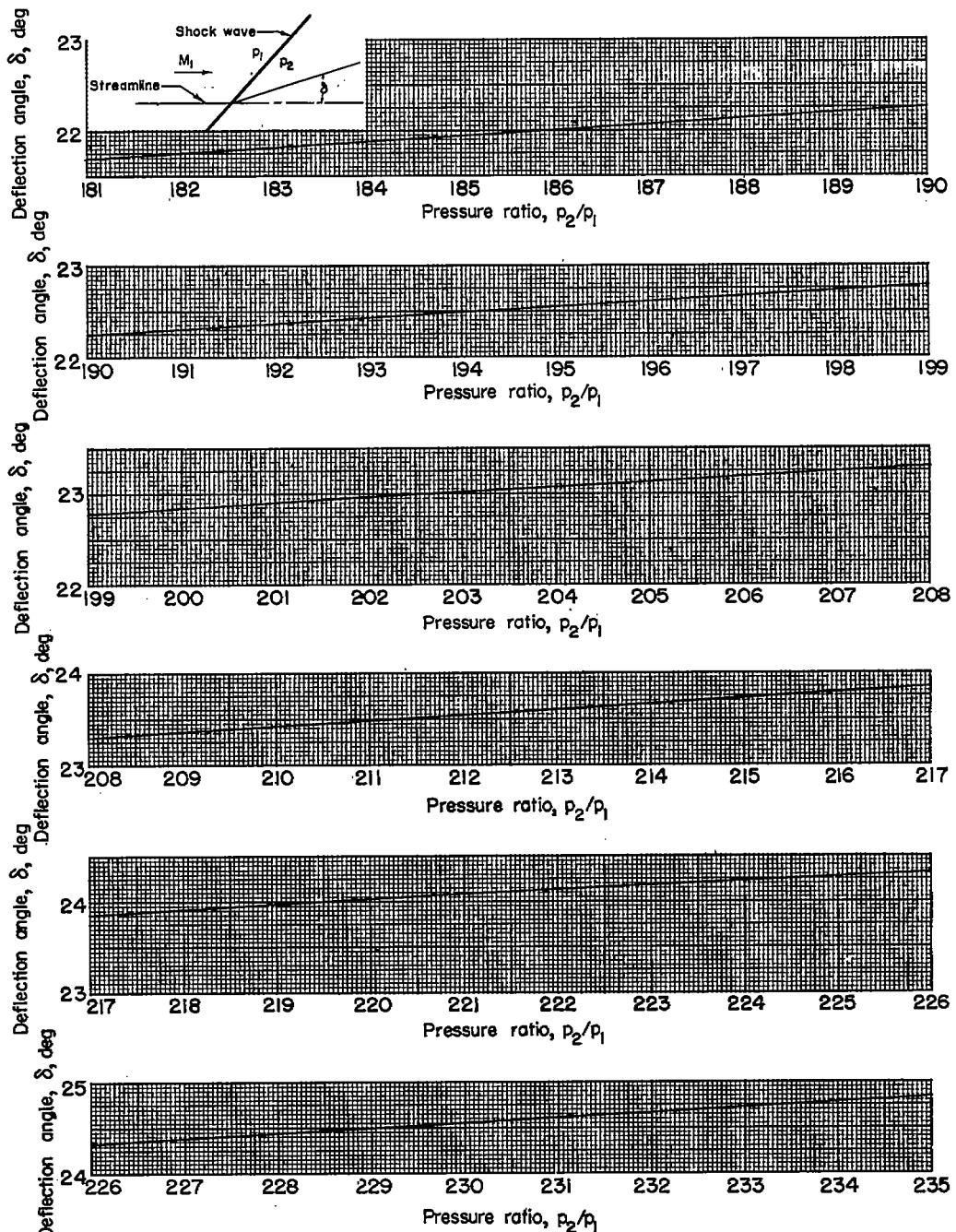
(c)  $p_2/p_1 = 73$  to 127.

Figure 9.- Continued.



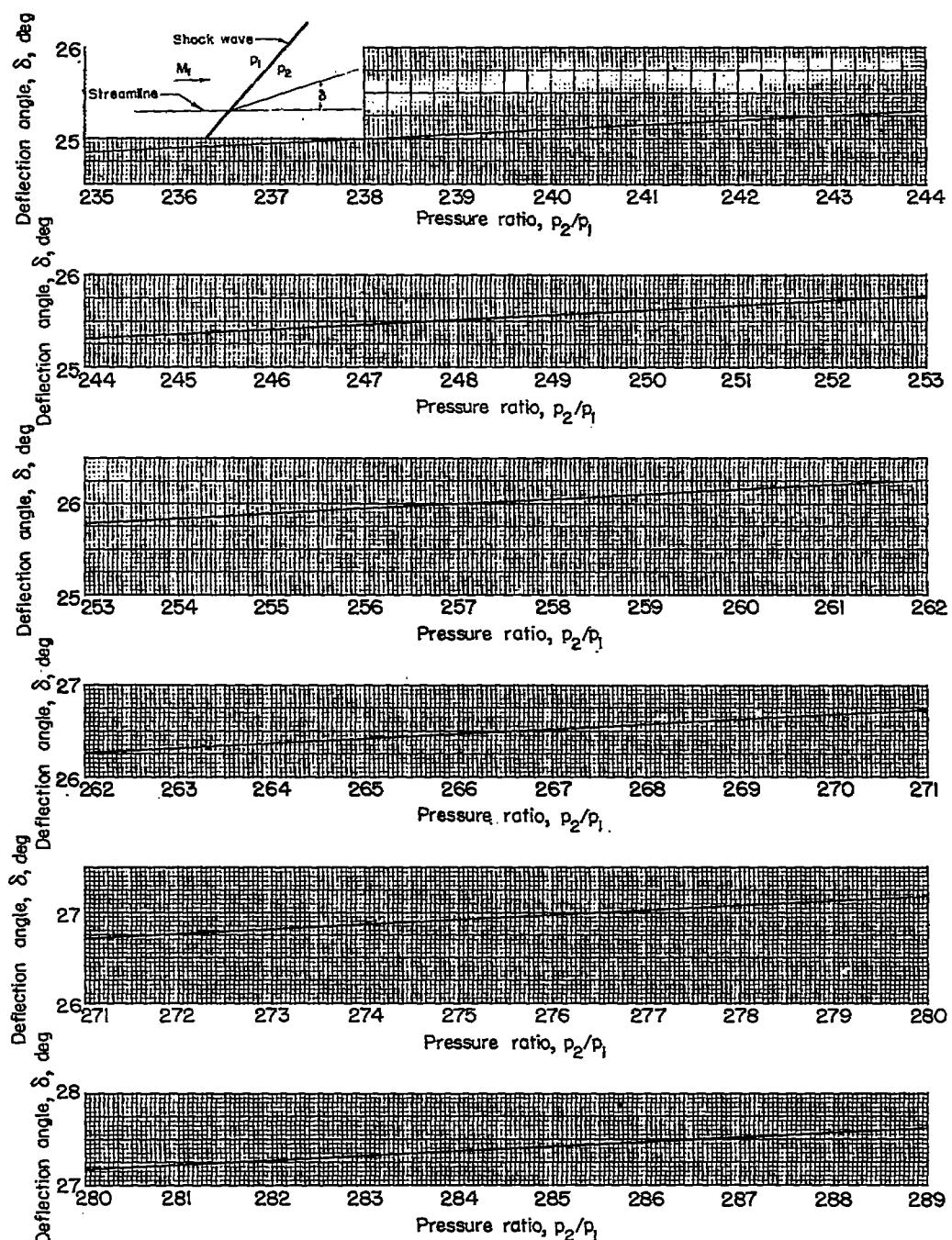
(d)  $p_2/p_1 = 127$  to 181.

Figure 9.- Continued.



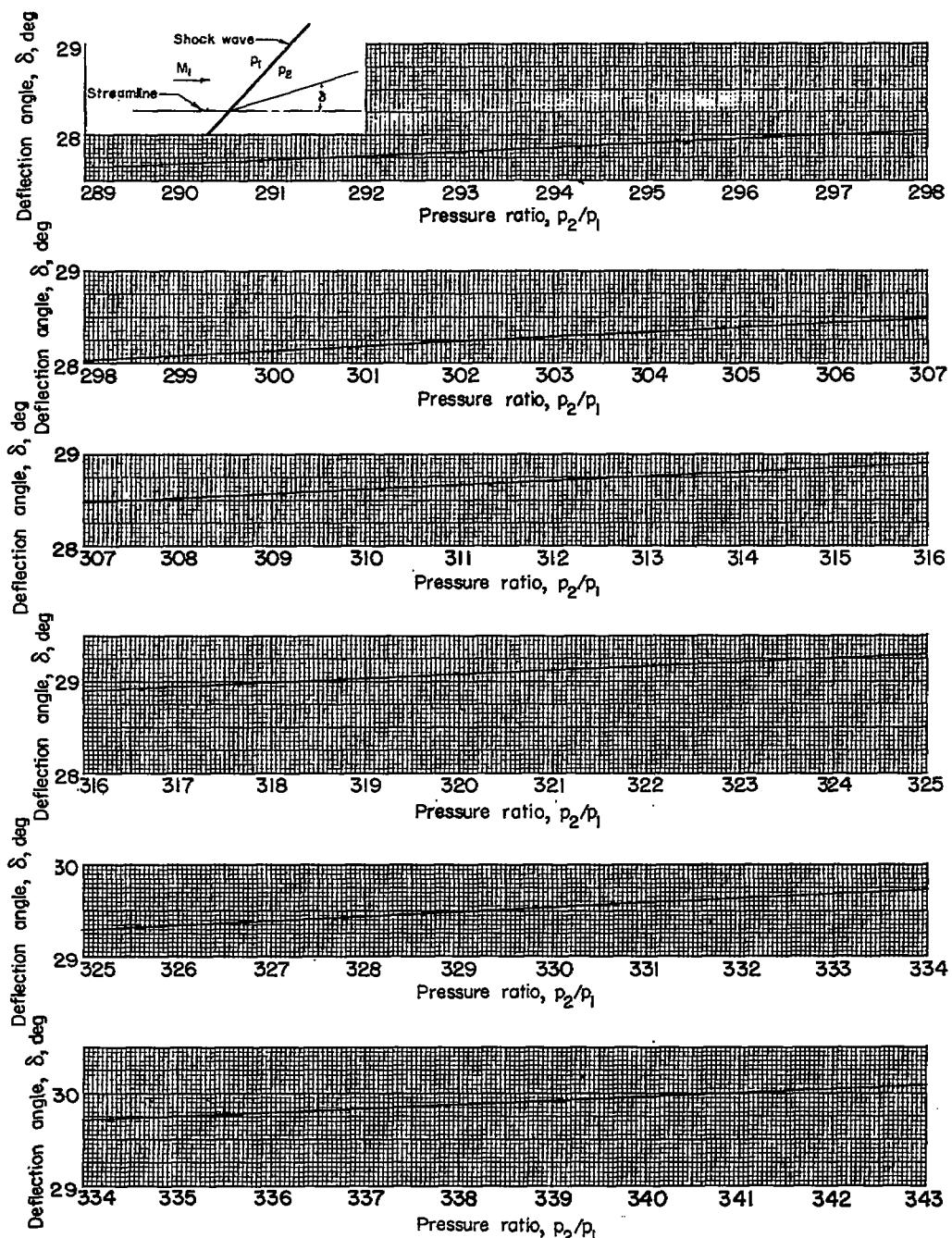
(e)  $p_2/p_1 = 181$  to 235.

Figure 9.- Continued.



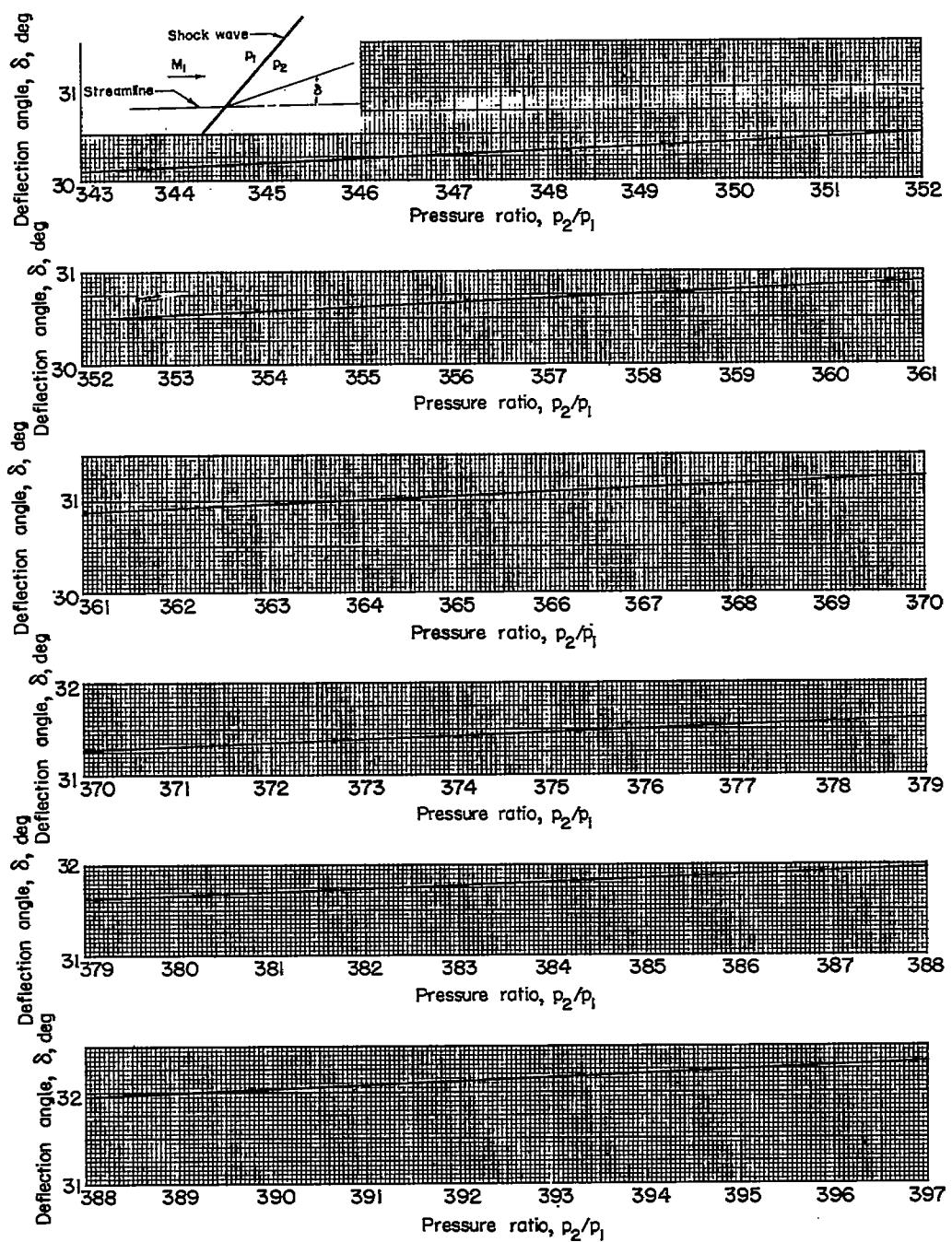
(f)  $p_2/p_1 = 235$  to 289.

Figure 9.- Continued.



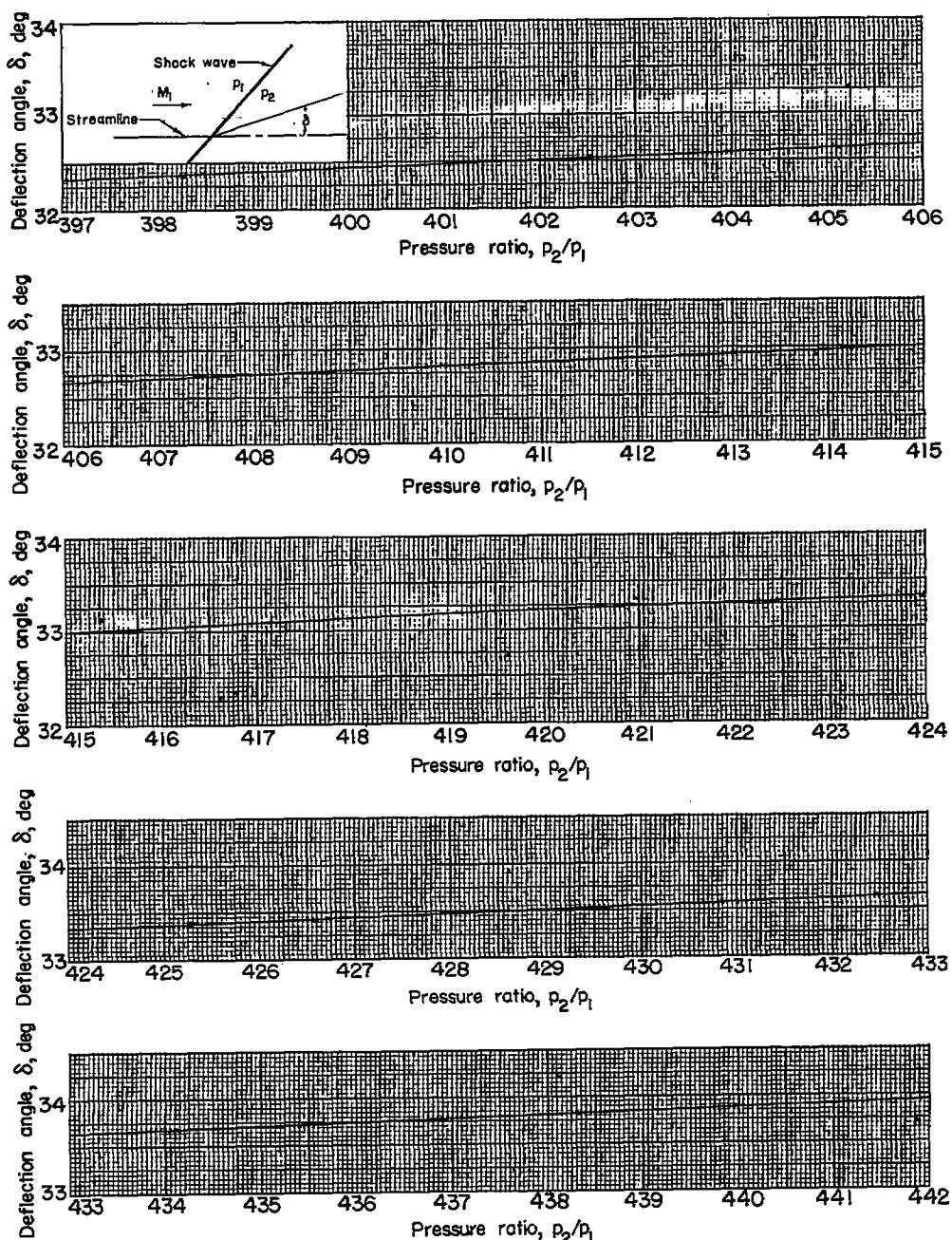
(g)  $p_2/p_1 = 289$  to 343.

Figure 9.- Continued.



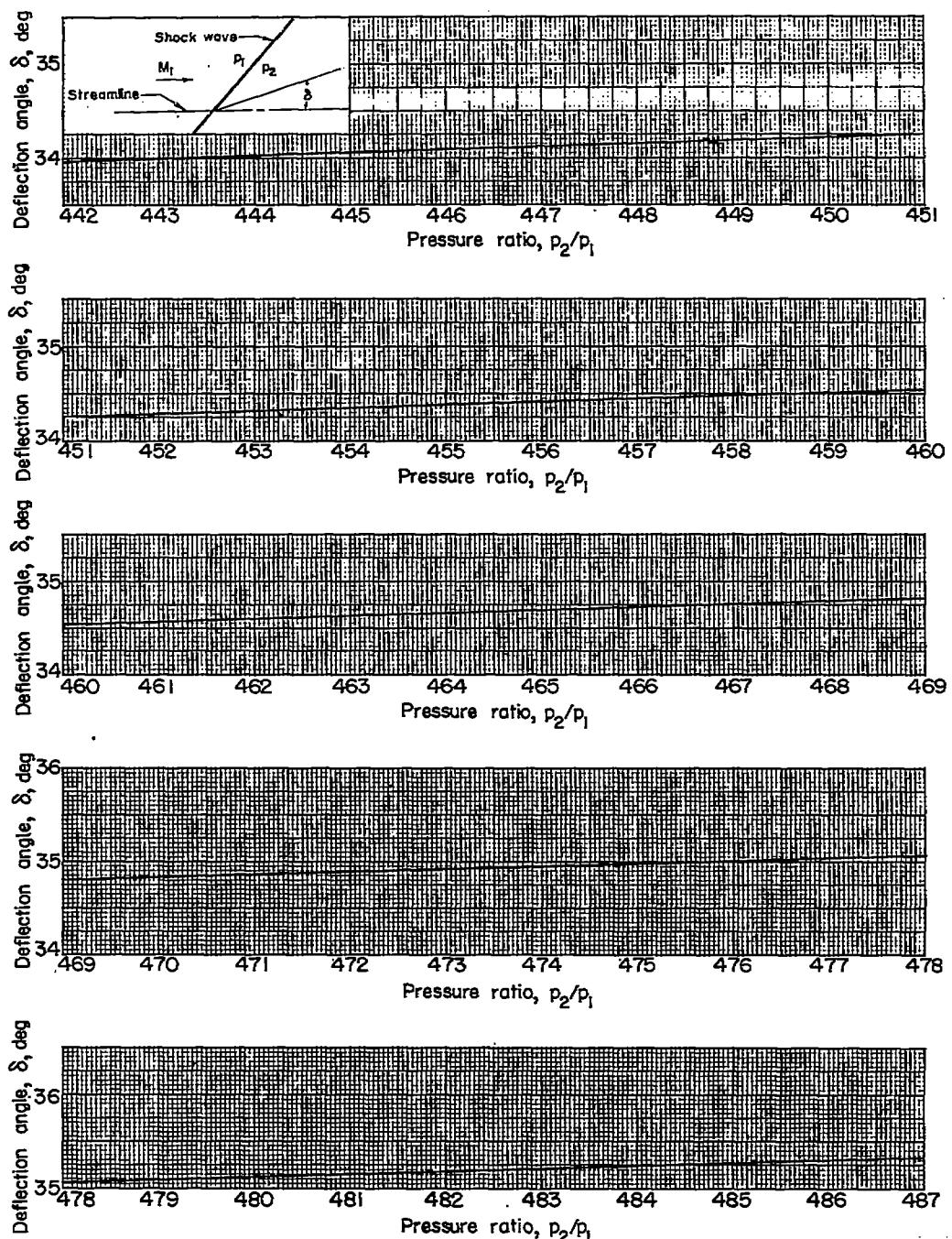
(h)  $p_2/p_1 = 343$  to 397.

Figure 9.- Continued.



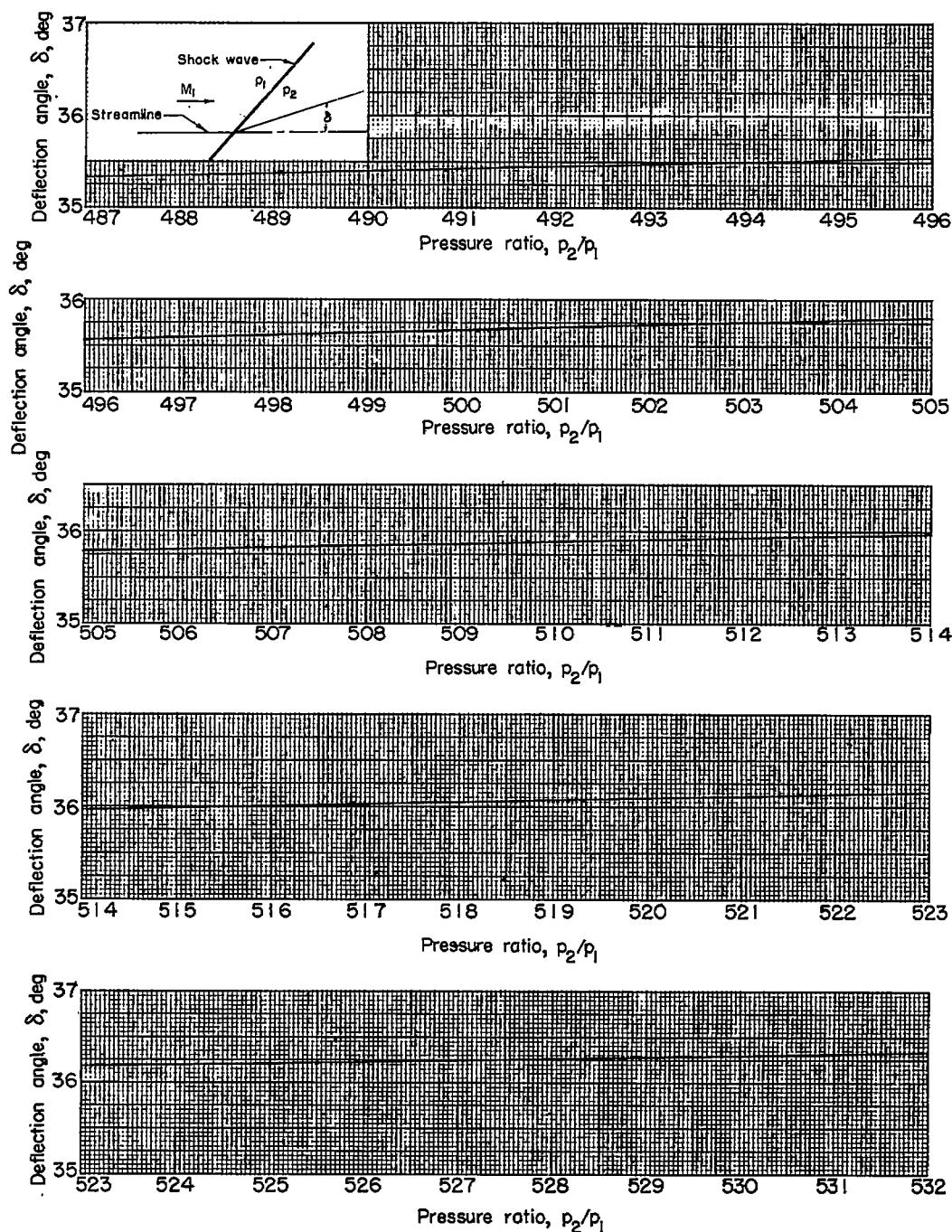
(i)  $p_2/p_1 = 397$  to 442.

Figure 9.- Continued.



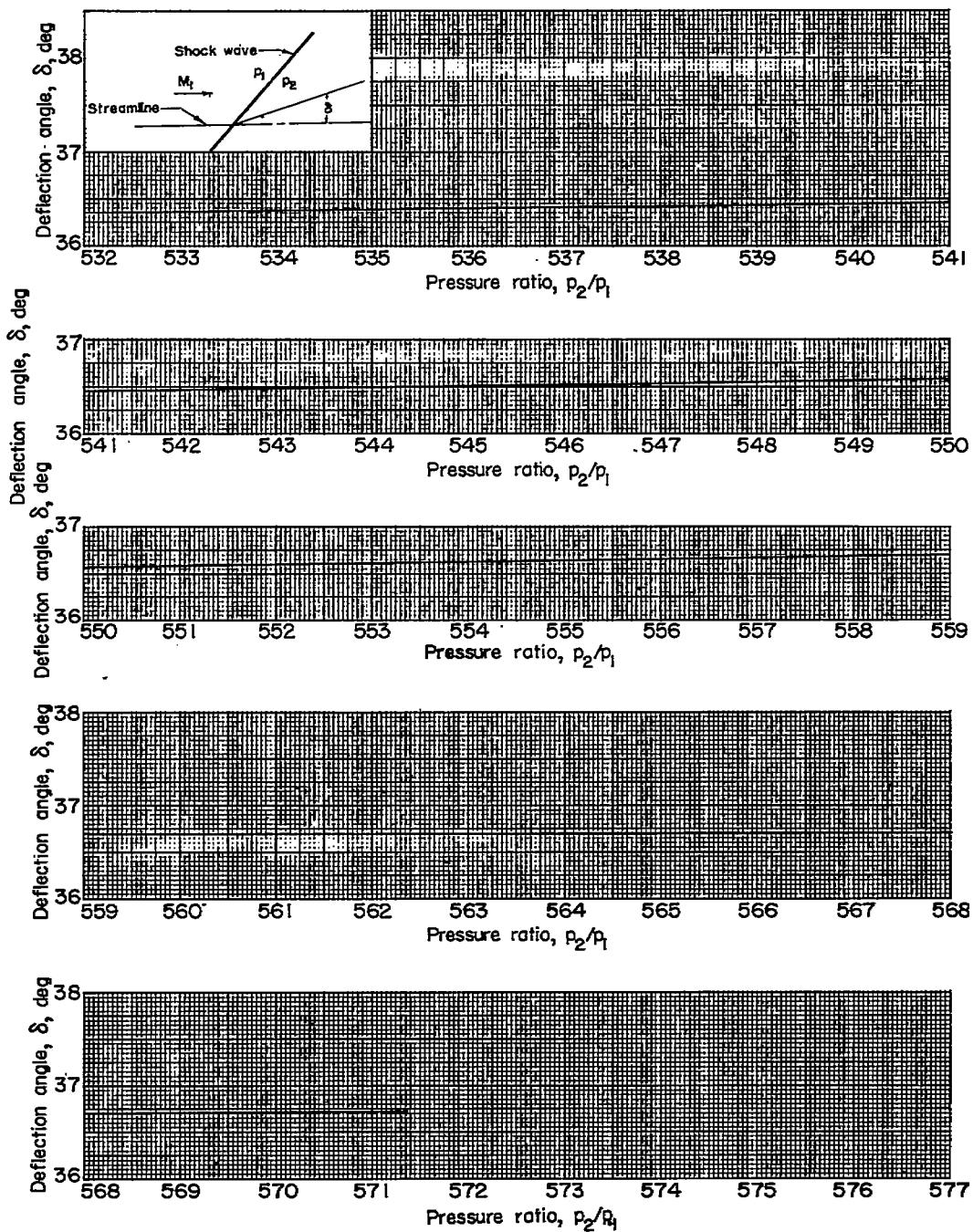
(j)  $p_2/p_1 = 442$  to 487.

Figure 9.- Continued.



(k)  $p_2/p_1 = 487$  to  $532$ .

Figure 9.- Continued.



(1)  $p_2/p_1 = 532$  to 577.

Figure 9.- Concluded.

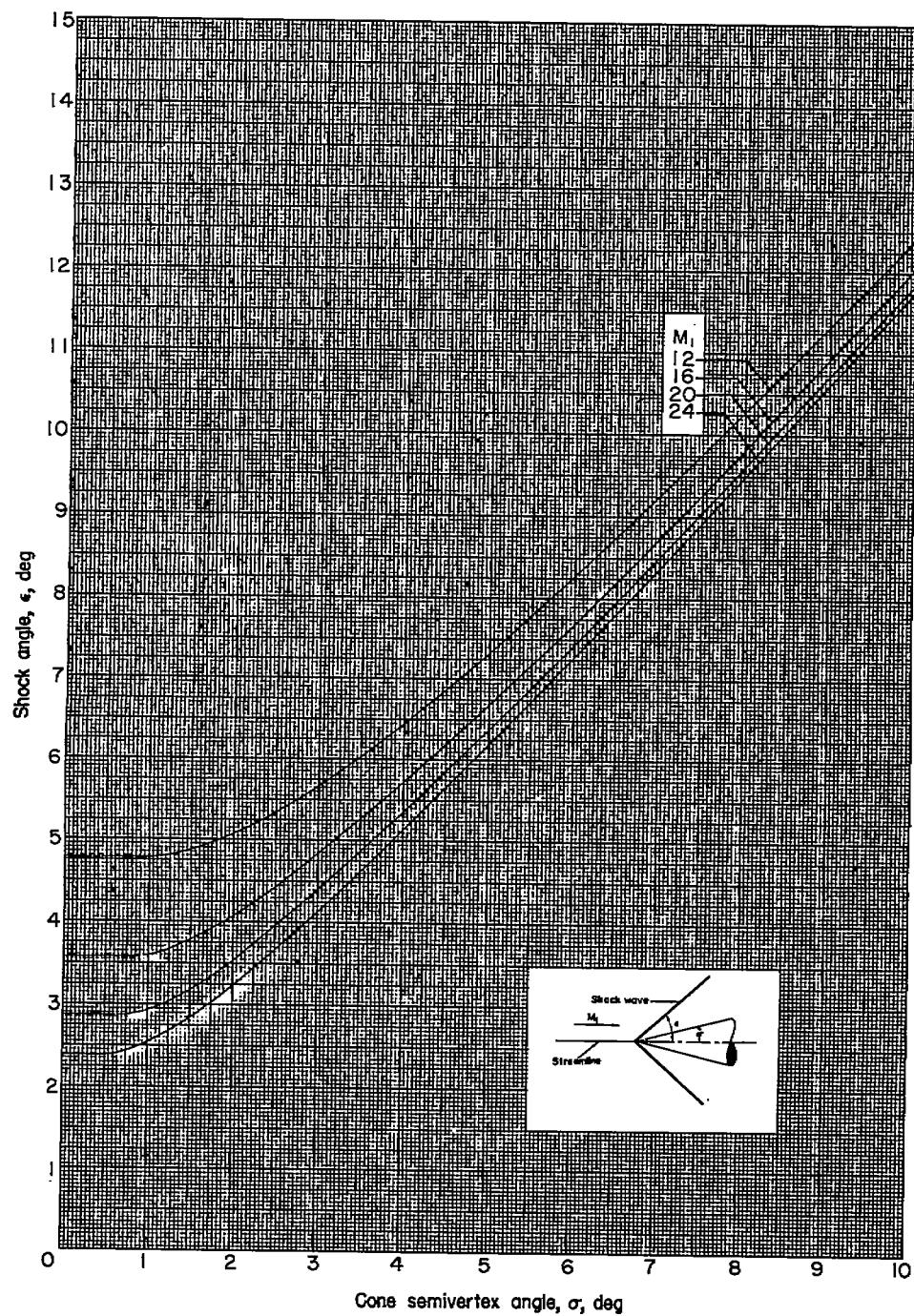
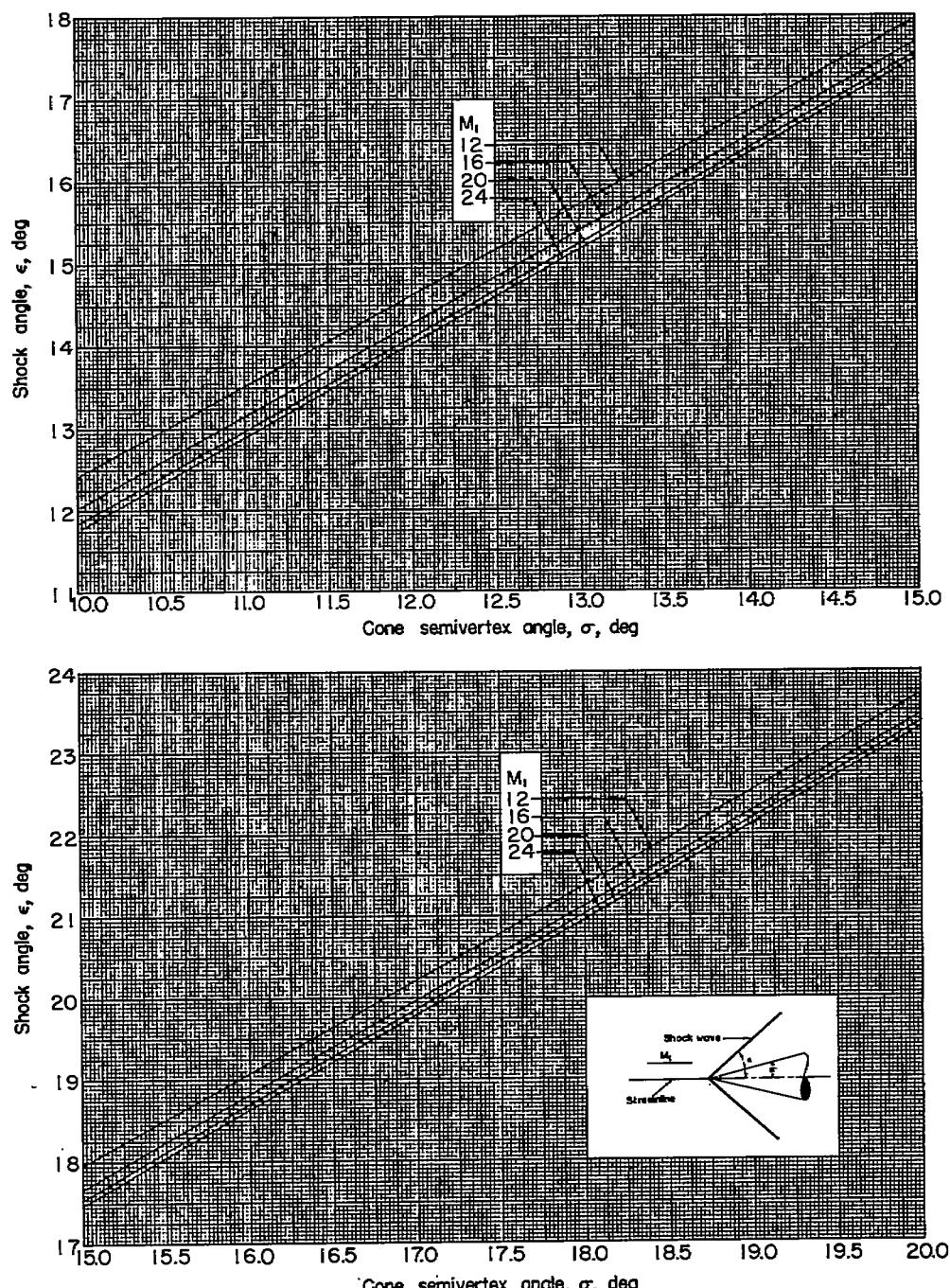
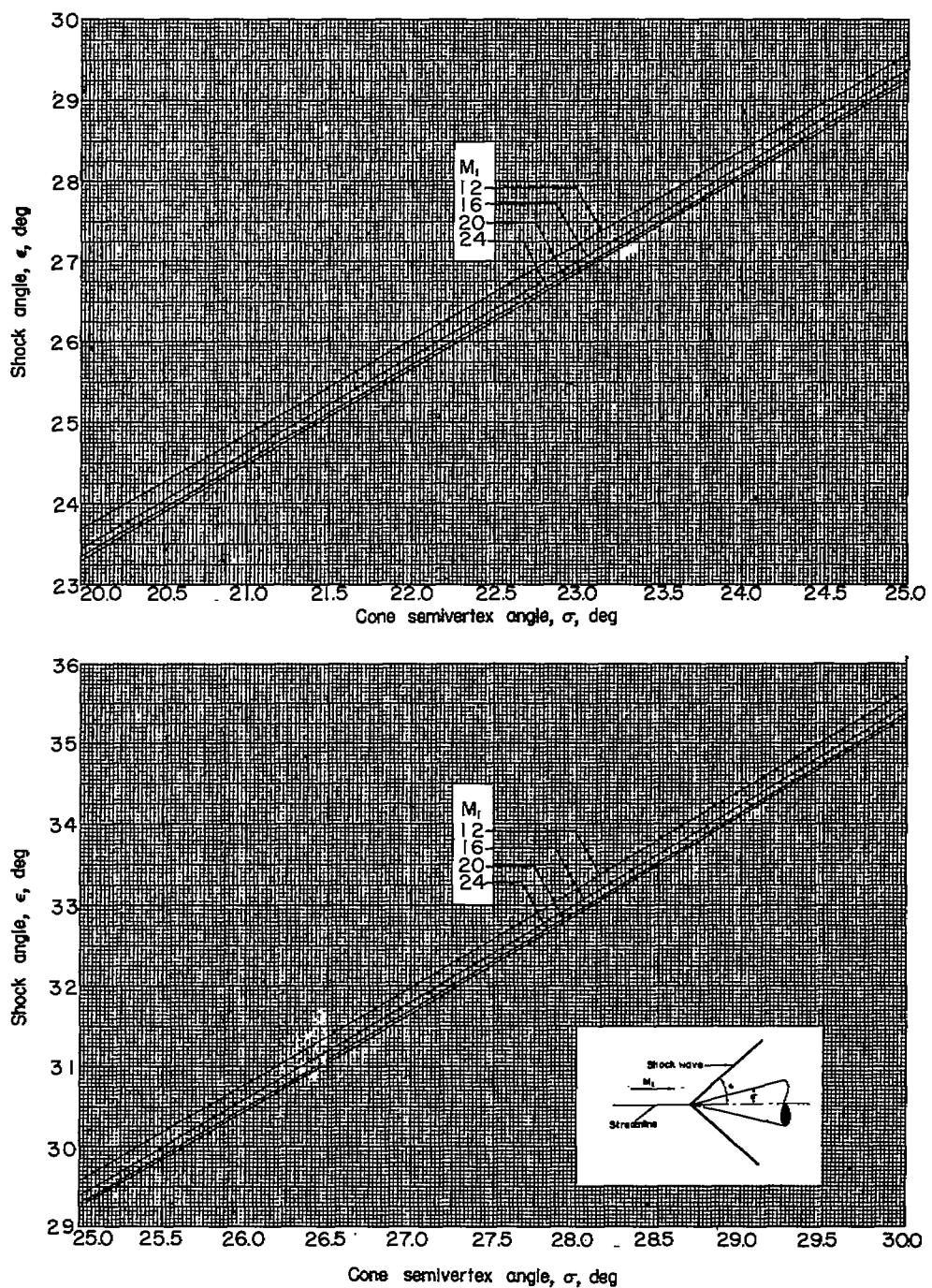
(a)  $\sigma = 0^\circ$  to  $10^\circ$ .

FIGURE 10.- Variation of the shock-wave angle with cone semivertex angle.



(b)  $\sigma = 10^\circ$  to  $20^\circ$ .

Figure 10.-- Continued. (Note change in abscissa scale.)



(c)  $\sigma = 20^\circ$  to  $30^\circ$ .

Figure 10.- Continued.

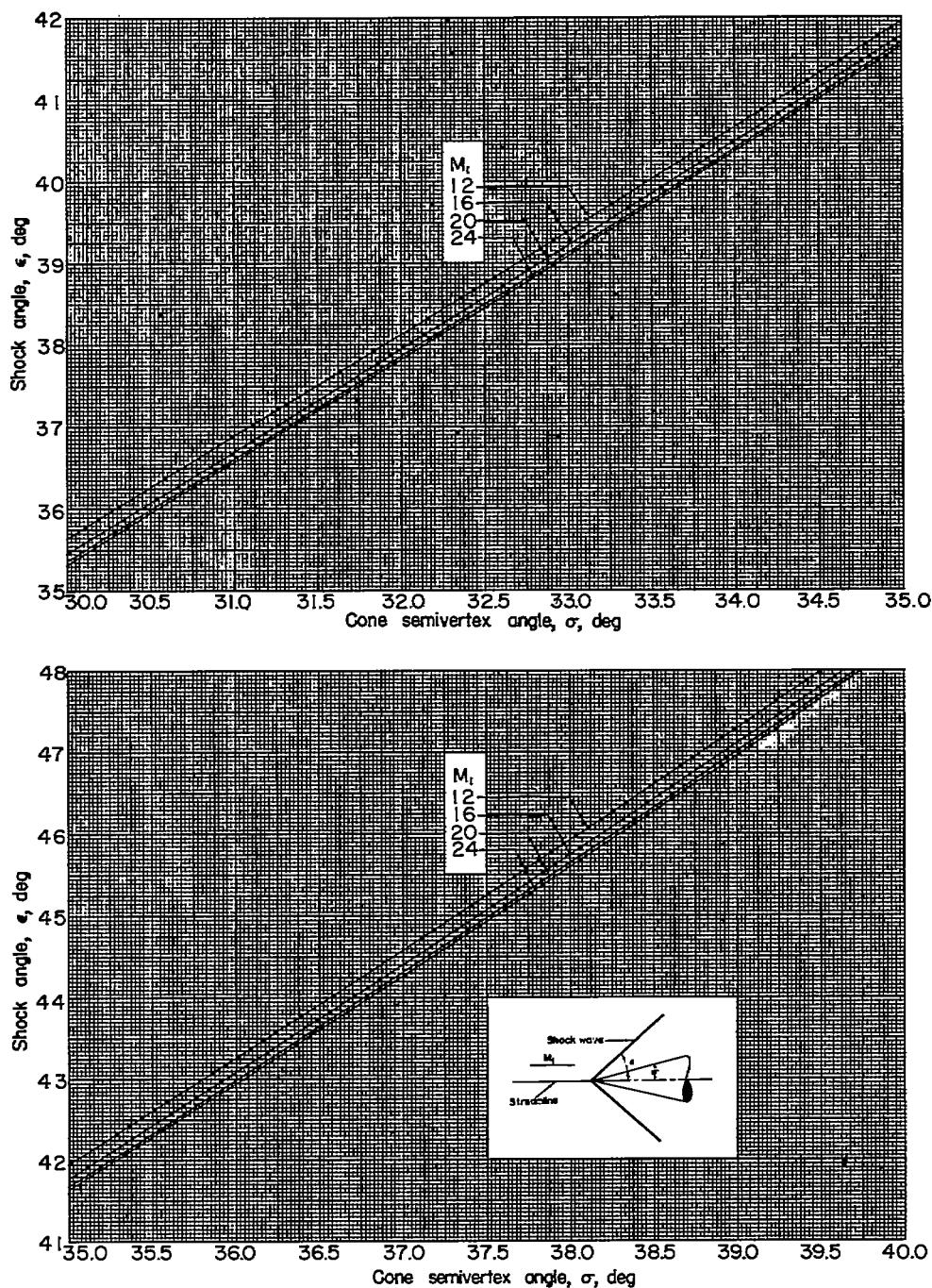
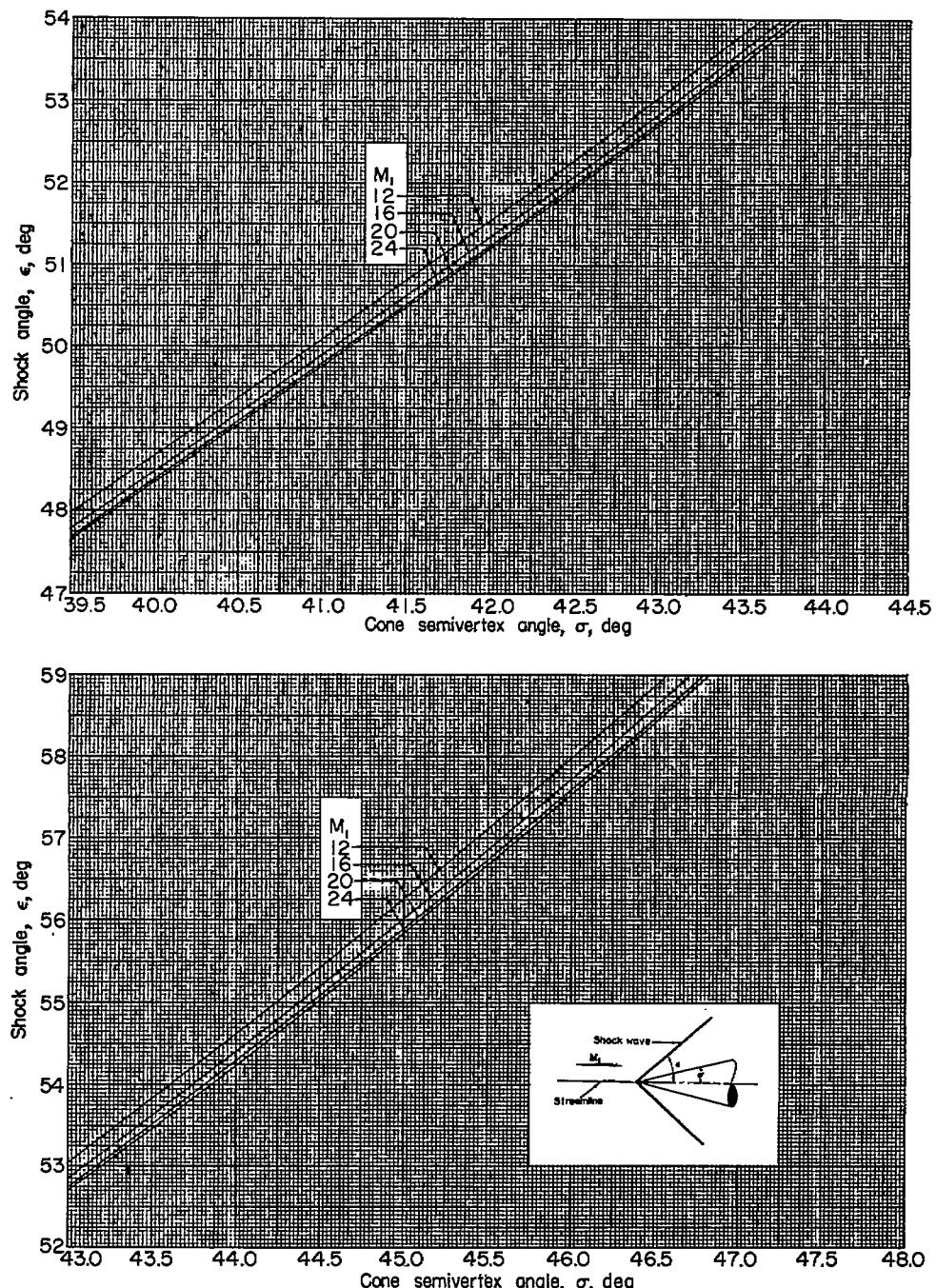
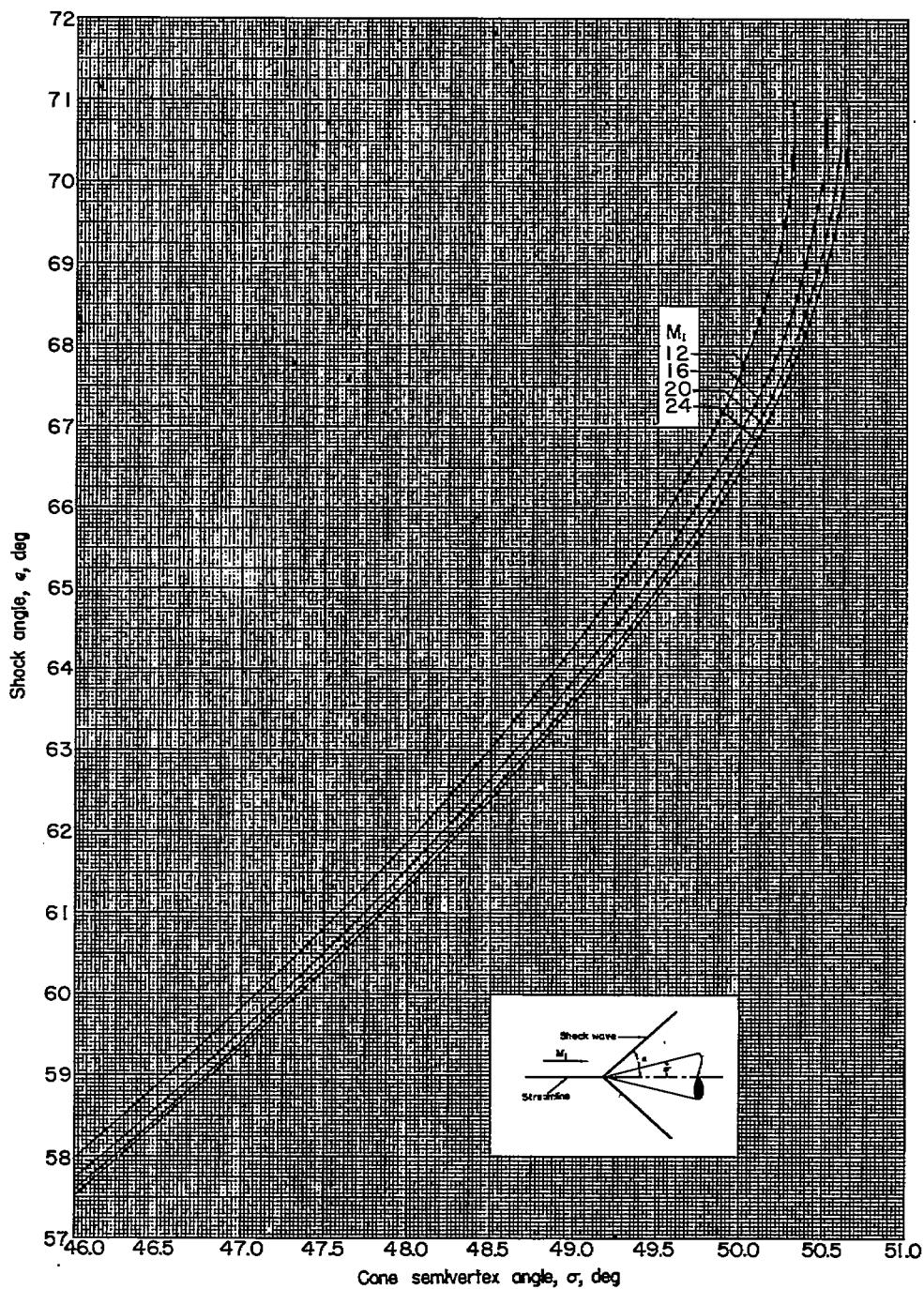
(d)  $\sigma = 30^\circ$  to  $40^\circ$ .

Figure 10.- Continued.



(e)  $\sigma = 39.5^\circ$  to  $48^\circ$ .

Figure 10.- Continued.



(f)  $\sigma = 46^\circ$  to  $51^\circ$ .

Figure 10.- Concluded.

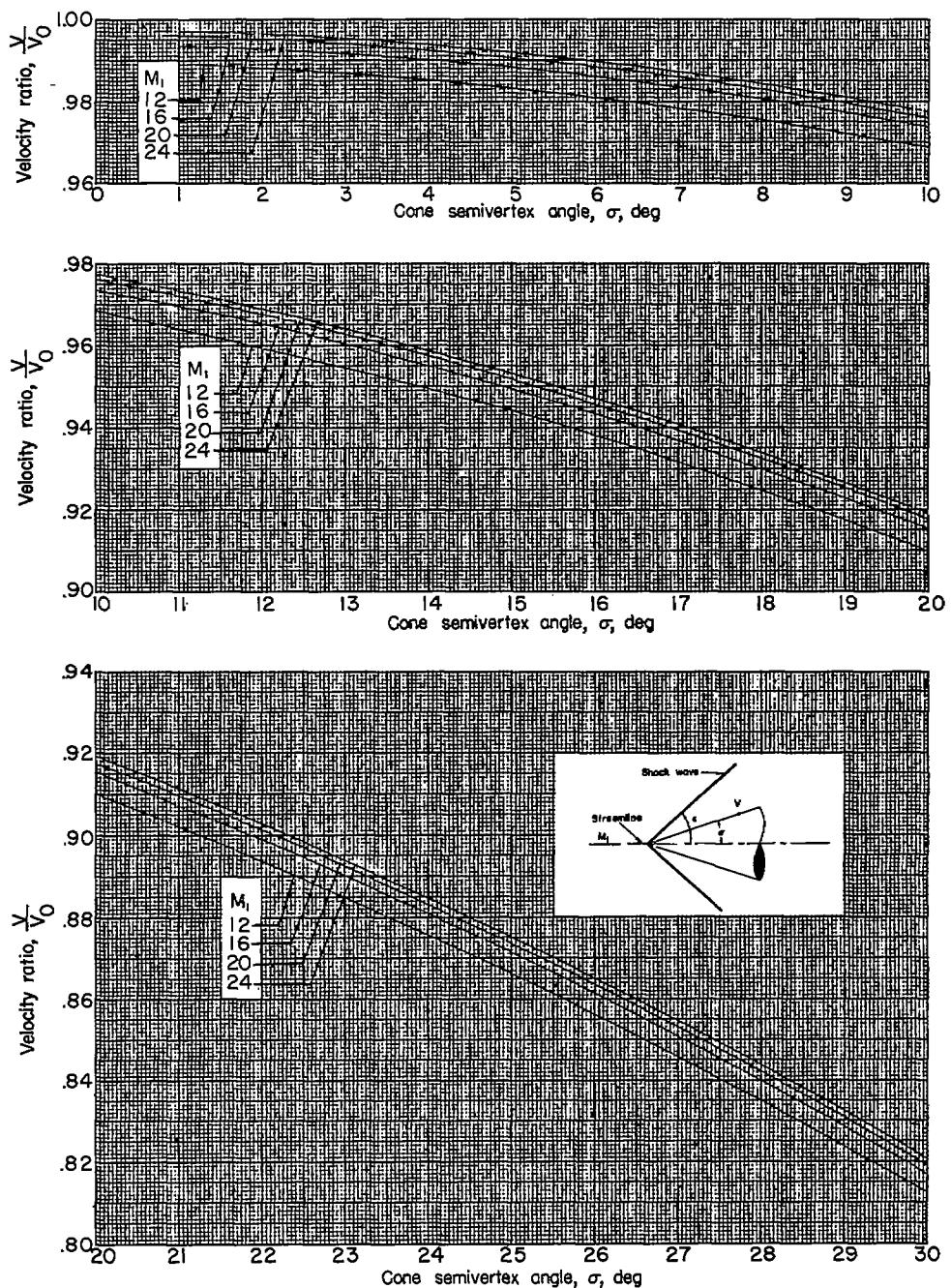
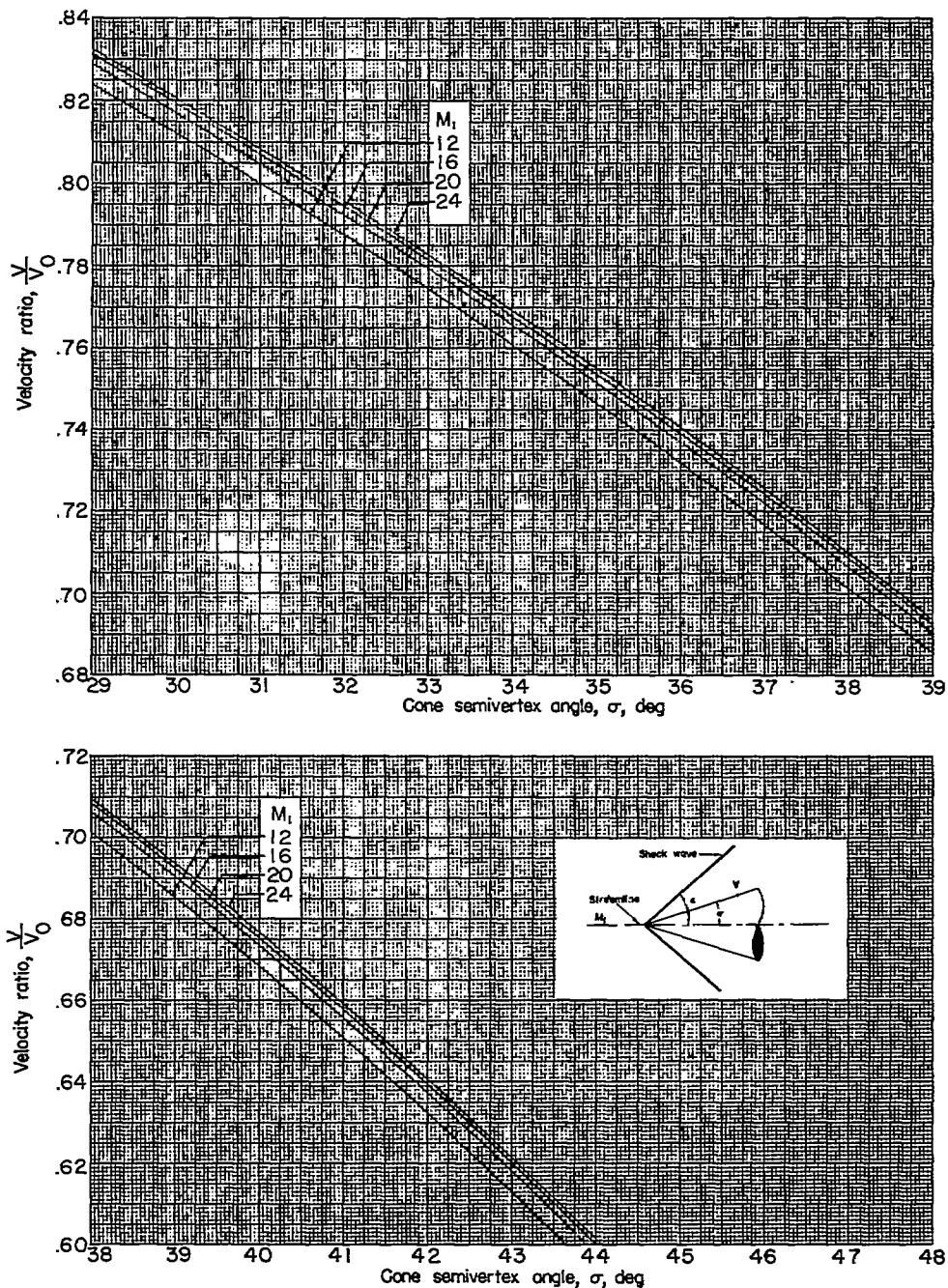
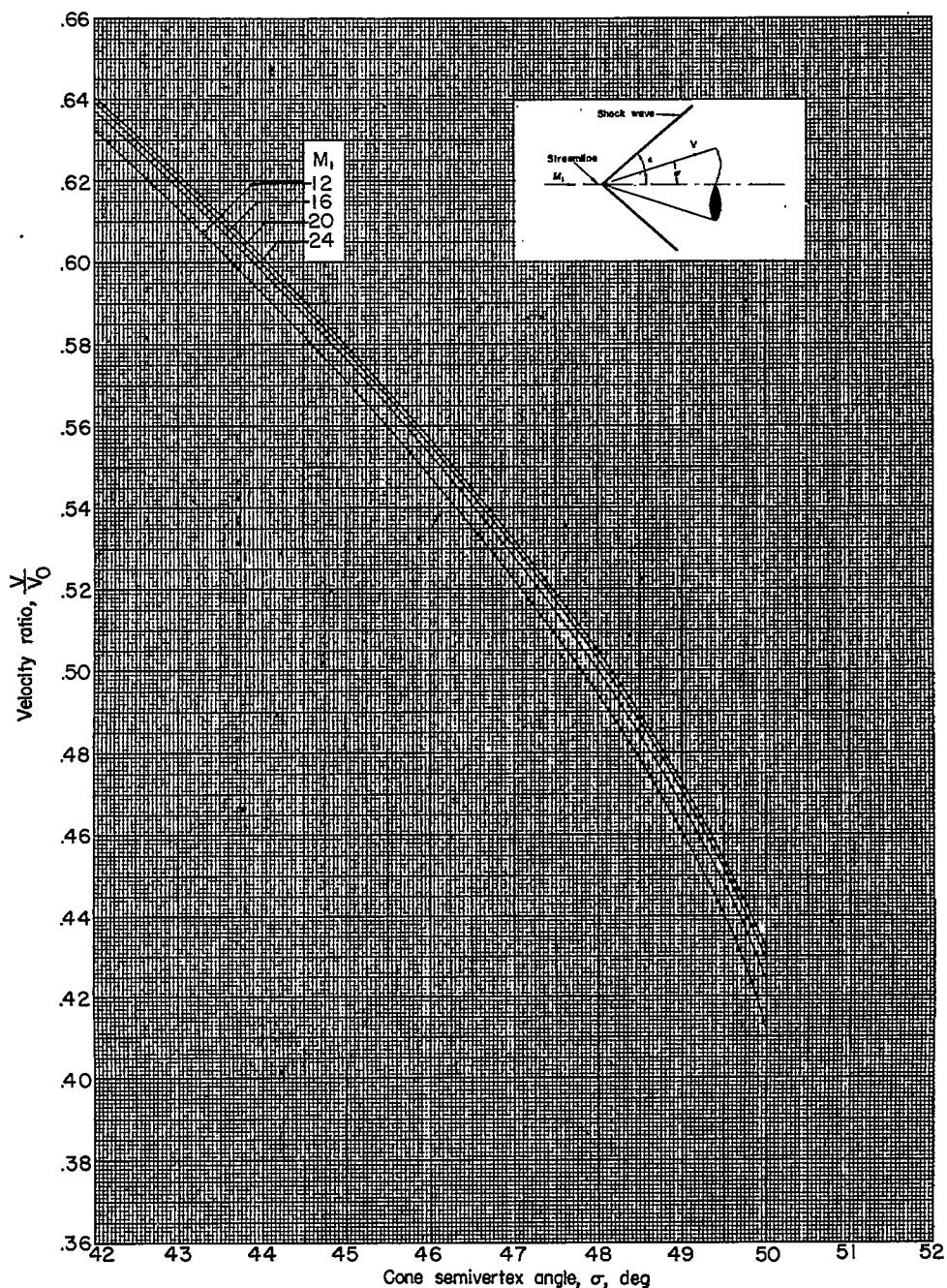
(a)  $\sigma = 0^\circ$  to  $30^\circ$ .

Figure 11.- Variation of the velocity at the surface of the cones expressed as a limiting velocity ratio  $V/V_0$  with cone semivertex angle.



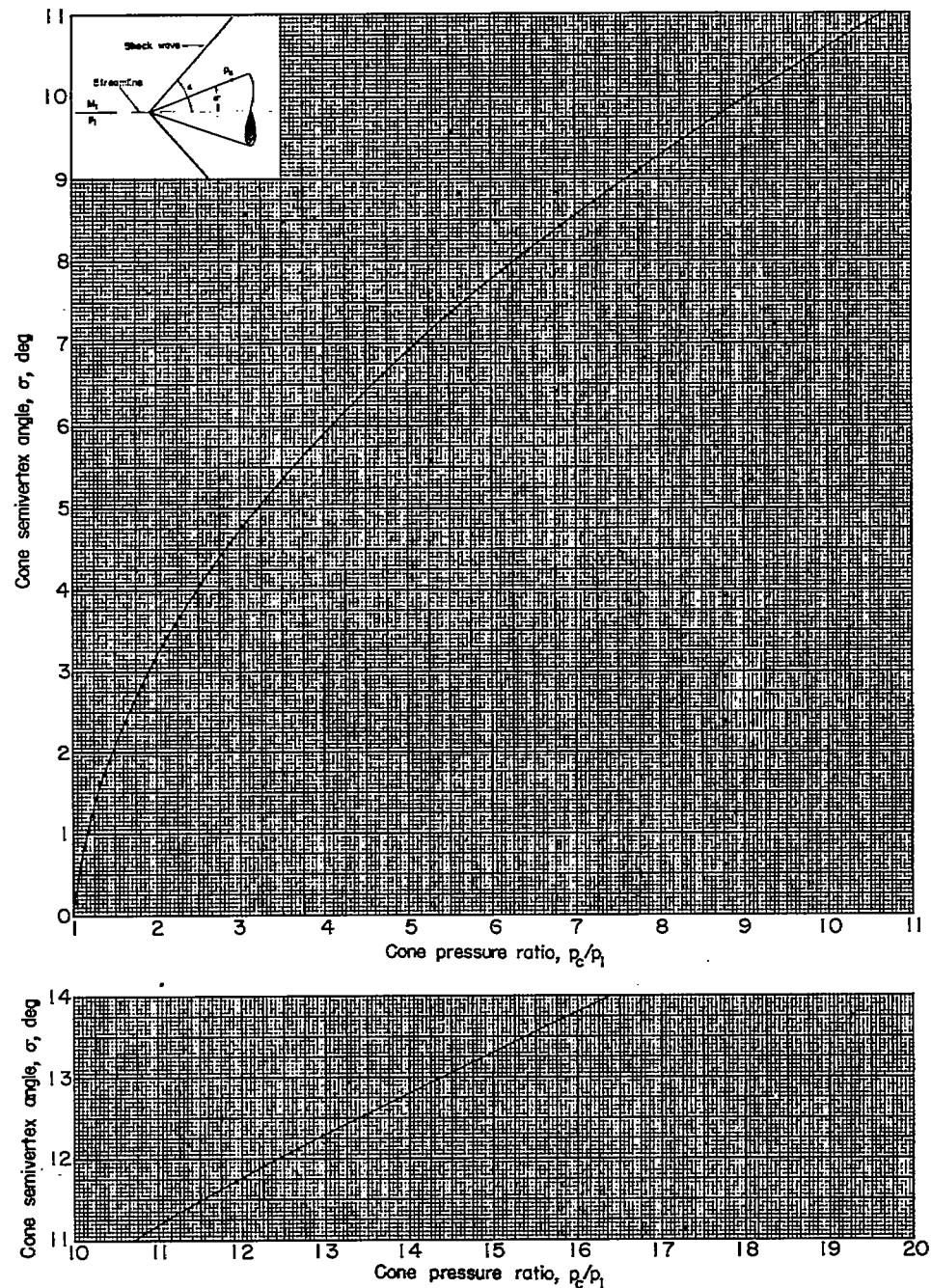
(b)  $\sigma = 29^\circ$  to  $48^\circ$ .

Figure 11.- Continued.



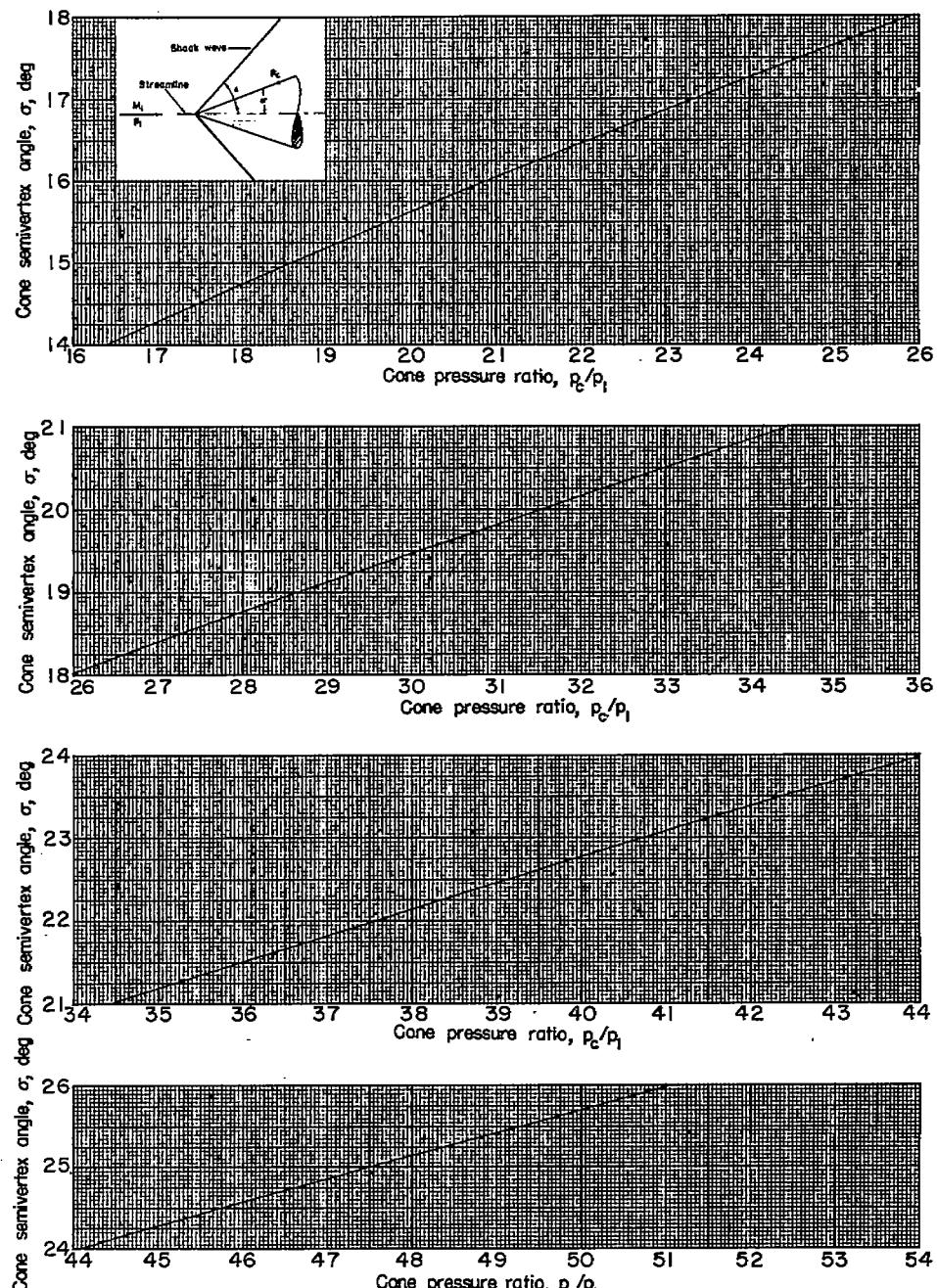
(c)  $\sigma = 42^\circ$  to  $52^\circ$ .

Figure 11.- Concluded.



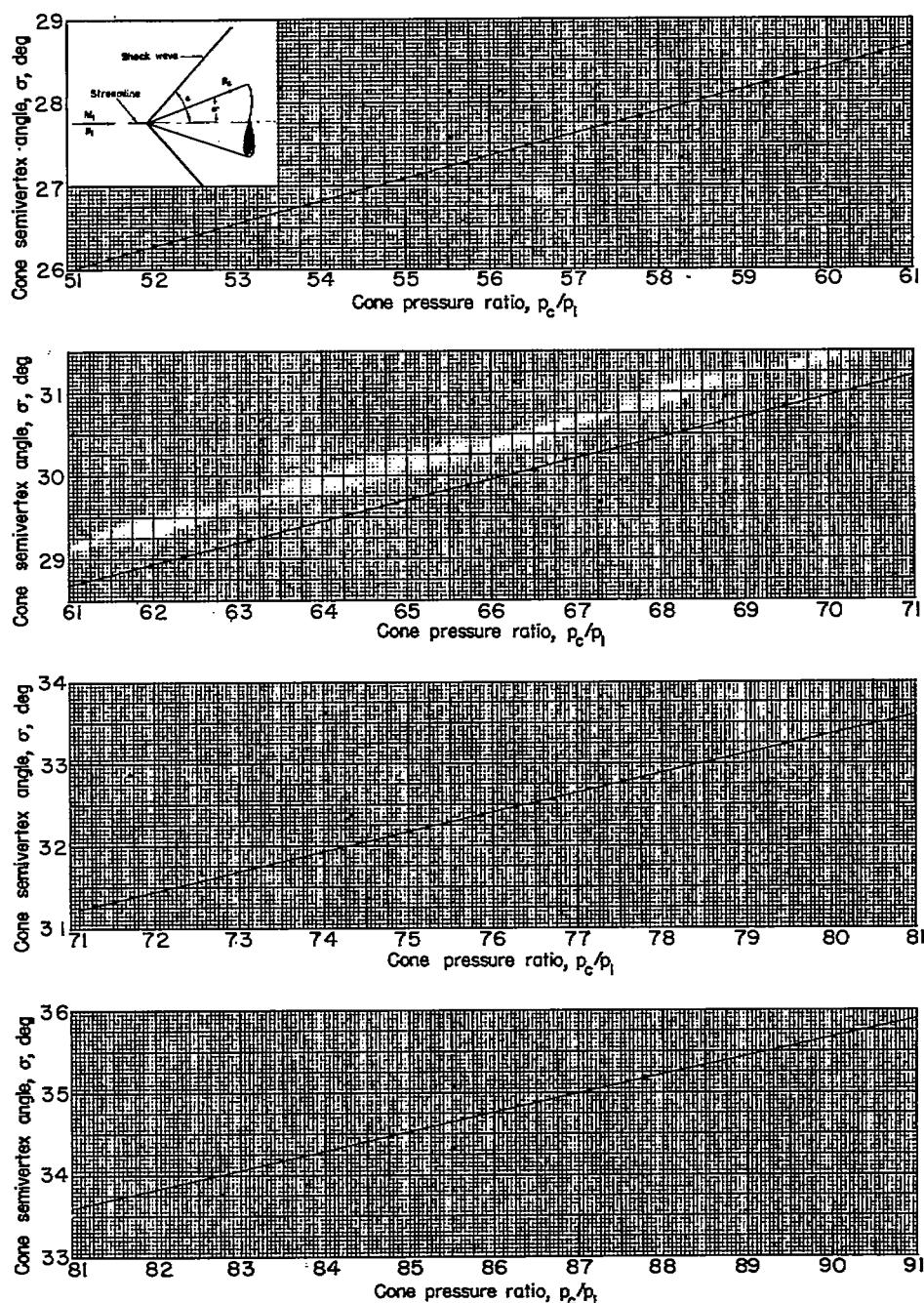
(a)  $p_c/p_1 = 1$  to 20.

Figure 12.- Variation of the cone pressure ratio  $p_c/p_1$  with cone semi-vertex angle.  $M_1 = 12$ ;  $\gamma = 5/3$ .



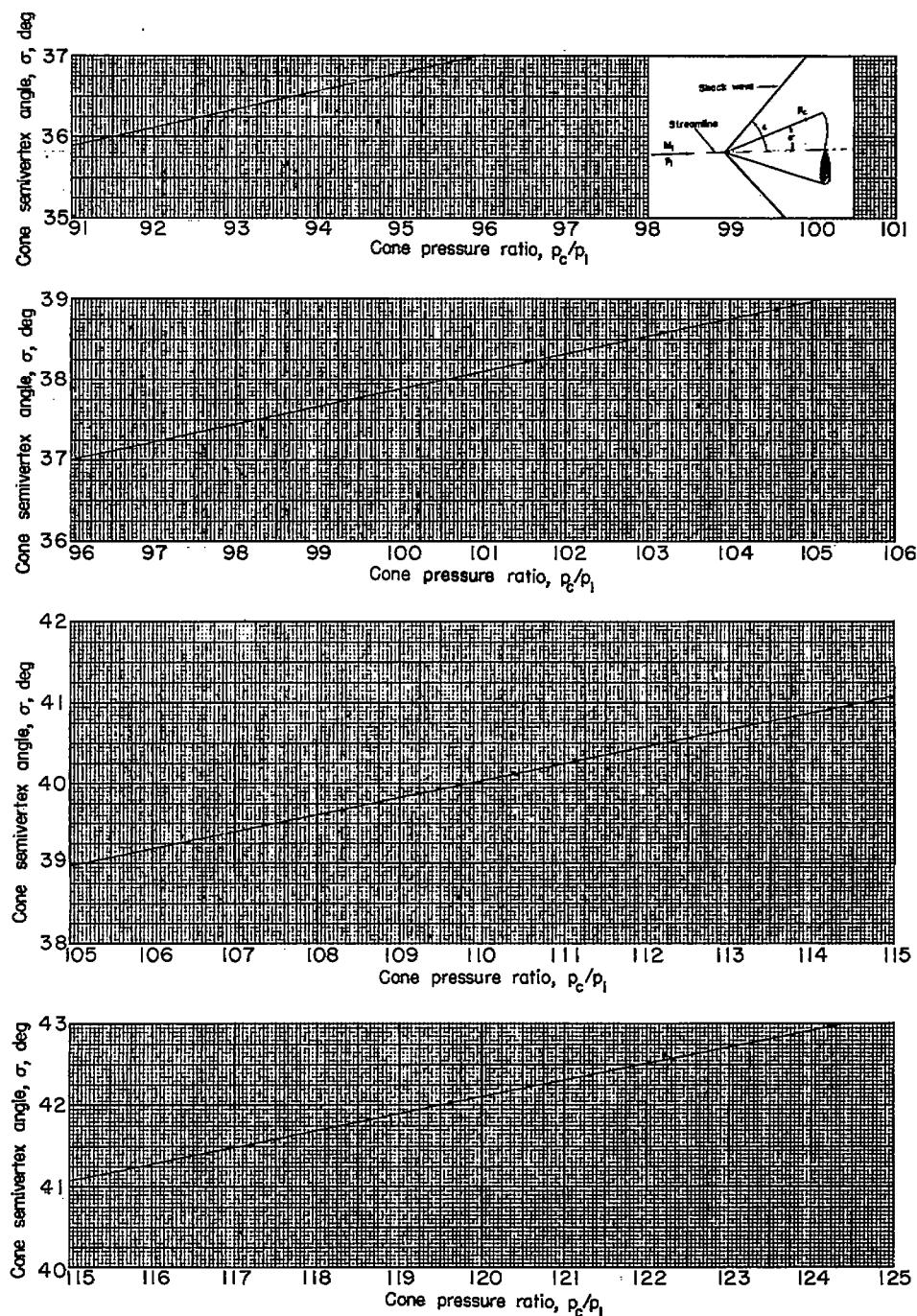
(b)  $p_c/p_1 = 16$  to  $54$ .

Figure 12.- Continued.



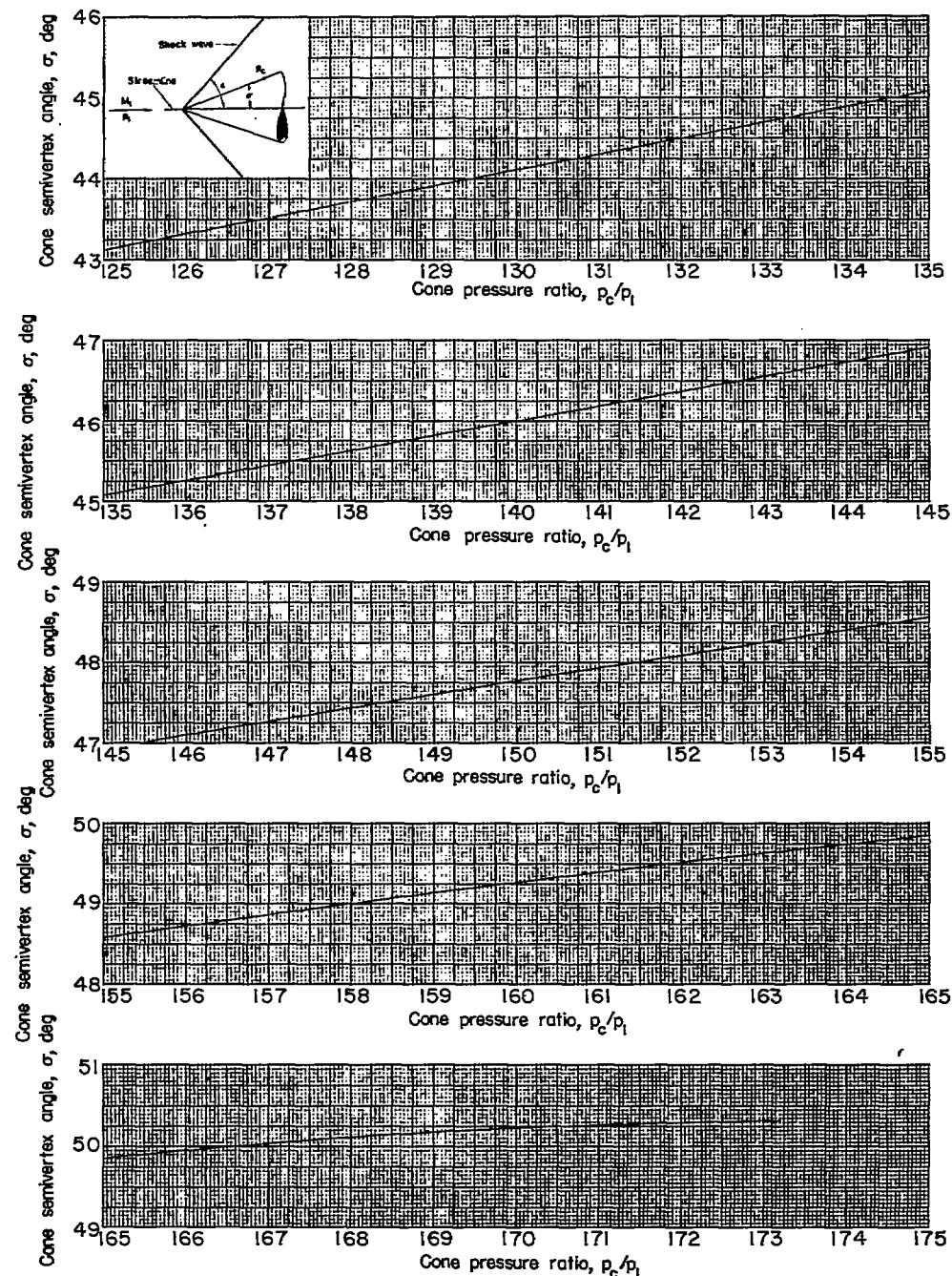
(c)  $p_c/p_1 = 51$  to  $91$ .

Figure 12.- Continued.



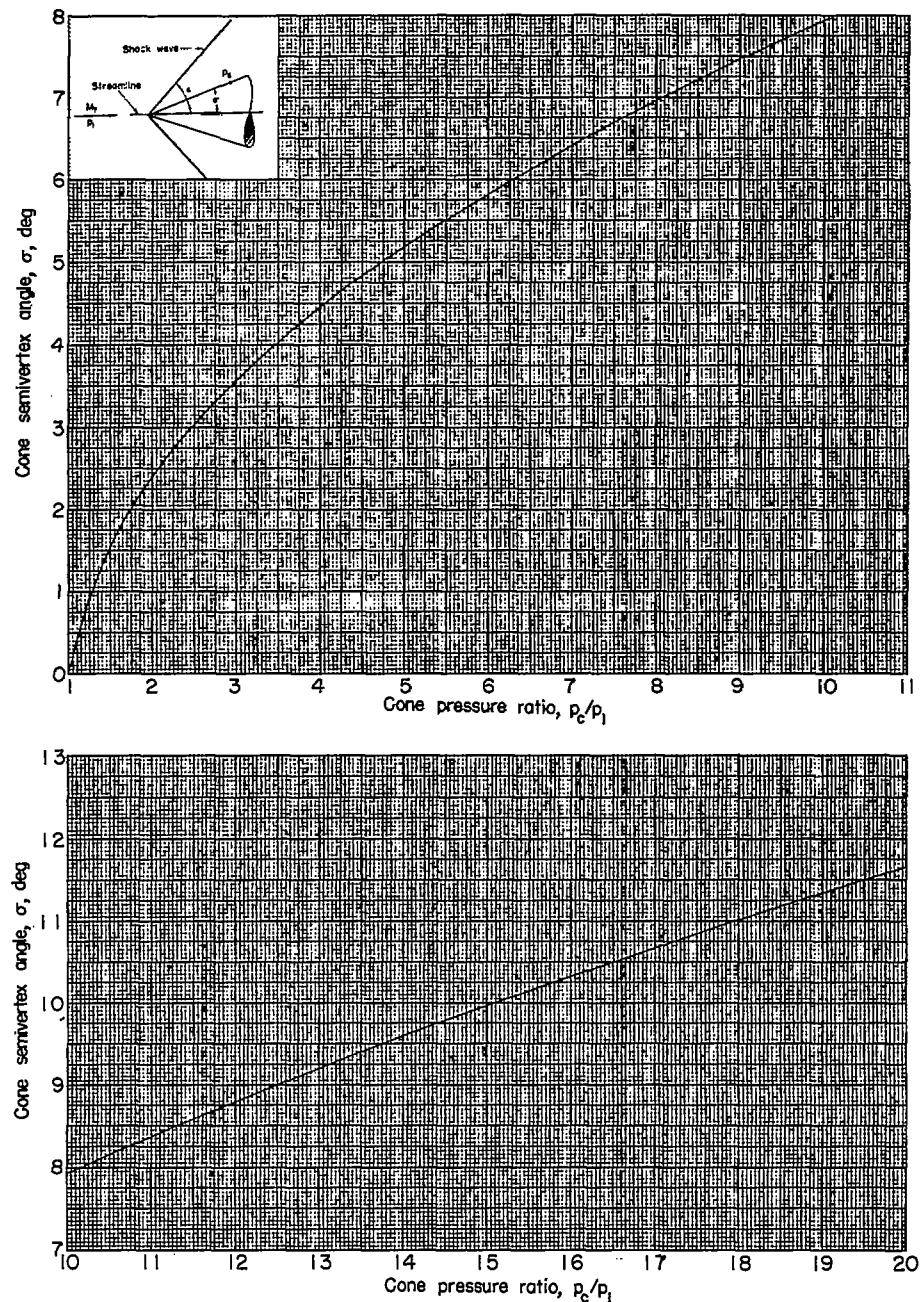
(d)  $p_c/p_1 = 91$  to 125.

Figure 12.- Continued.



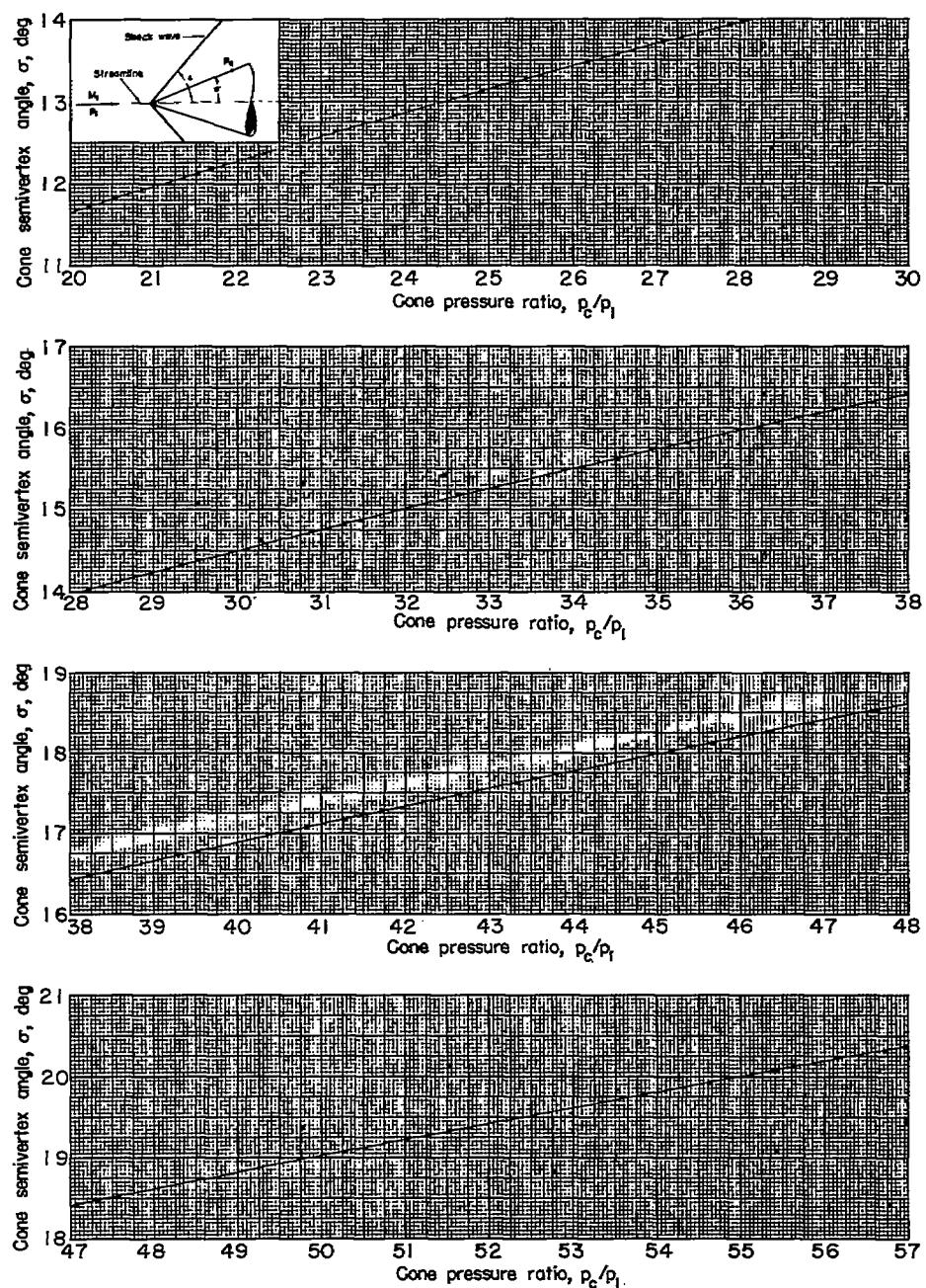
(e)  $p_c/p_1 = 125$  to 175.

Figure 12.- Concluded.



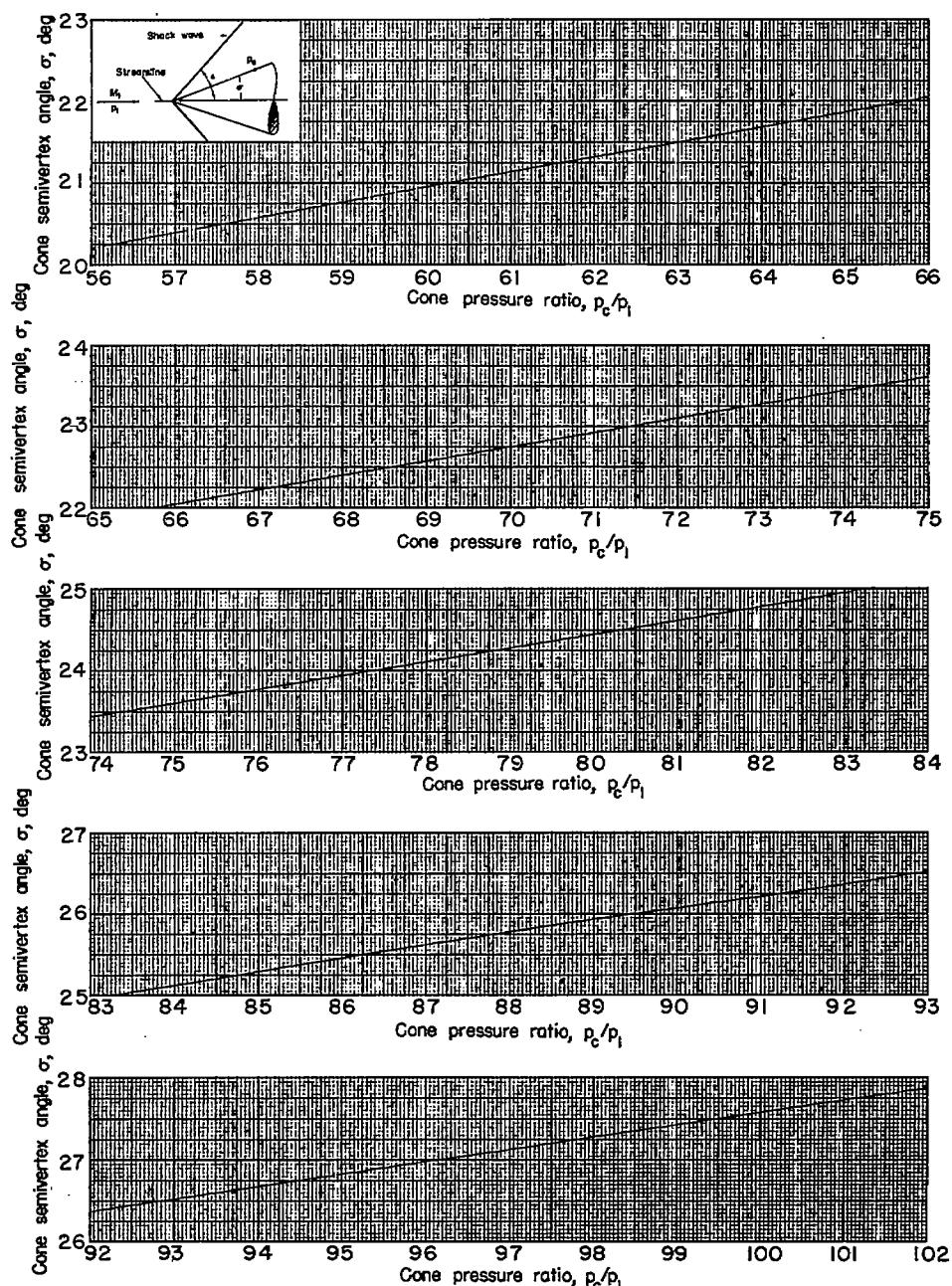
(a)  $p_c/p_1 = 1$  to 20.

Figure 13.- Variation of the cone pressure ratio  $p_c/p_1$  with cone semi-vertex angle.  $M_1 = 16$ ;  $\gamma = 5/3$ .



(b)  $p_c/p_1 = 20$  to 57.

Figure 13.- Continued.



(c)  $p_c/p_1 = 56$  to 102.

Figure 13.- Continued.

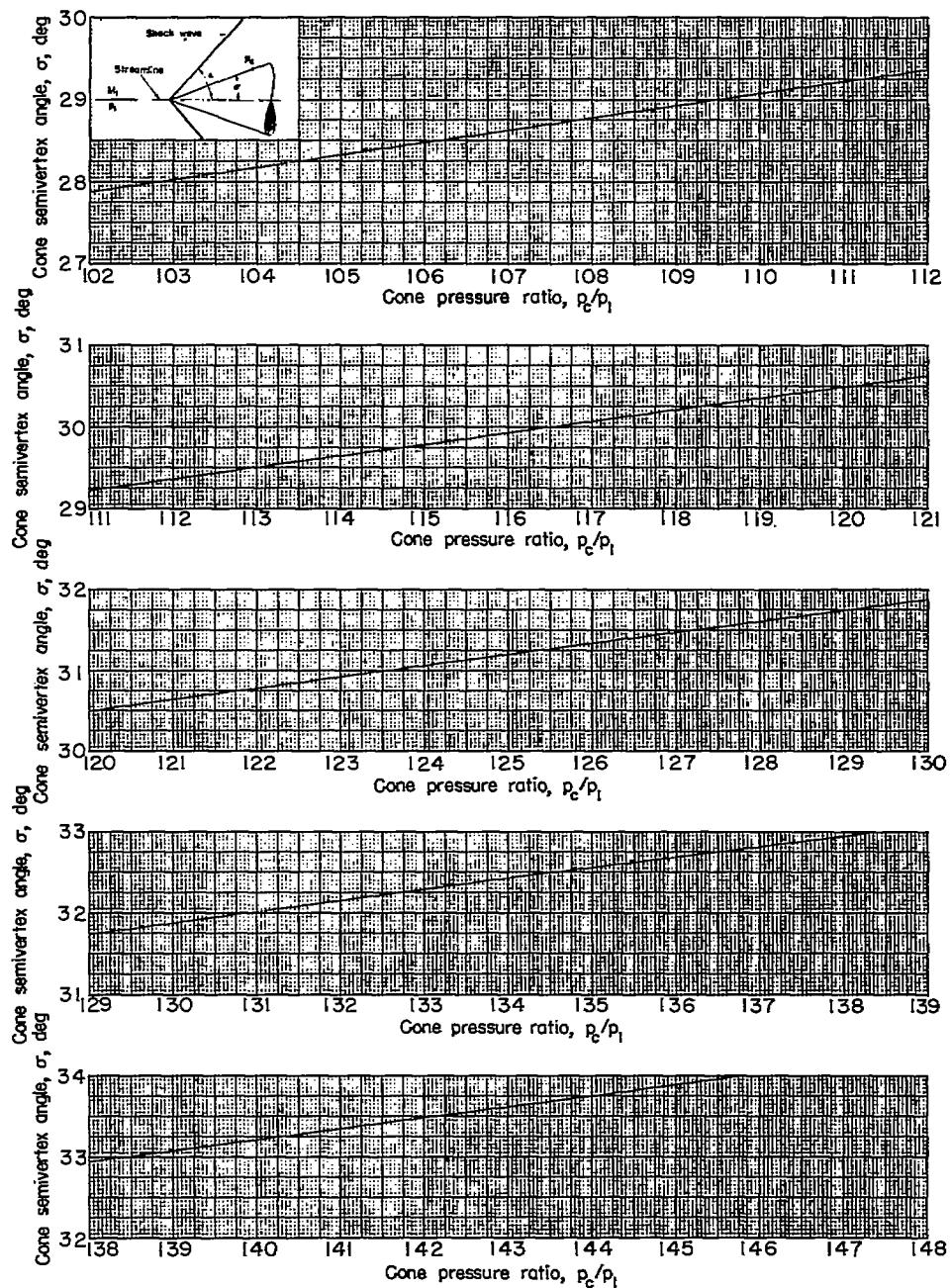
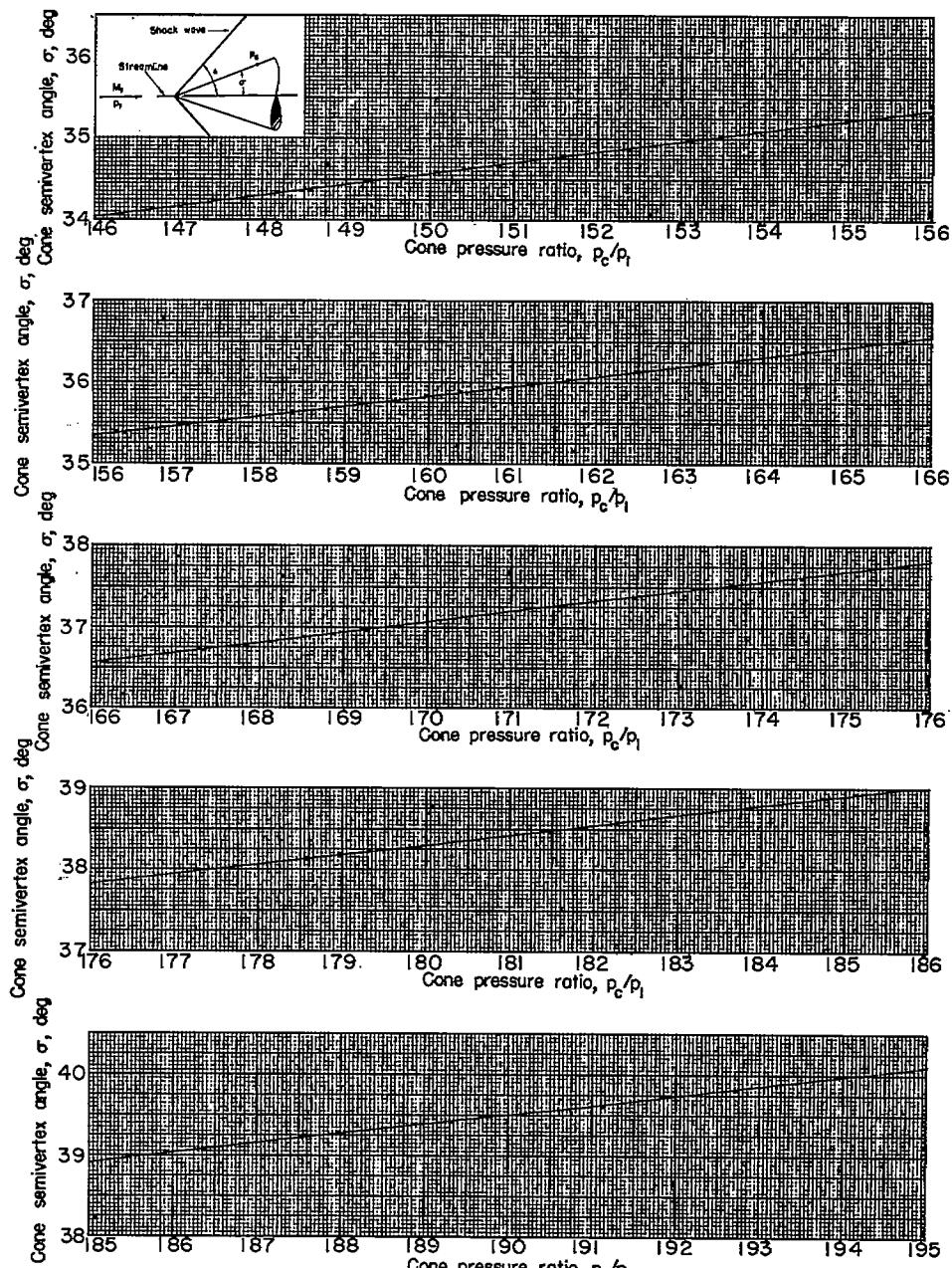
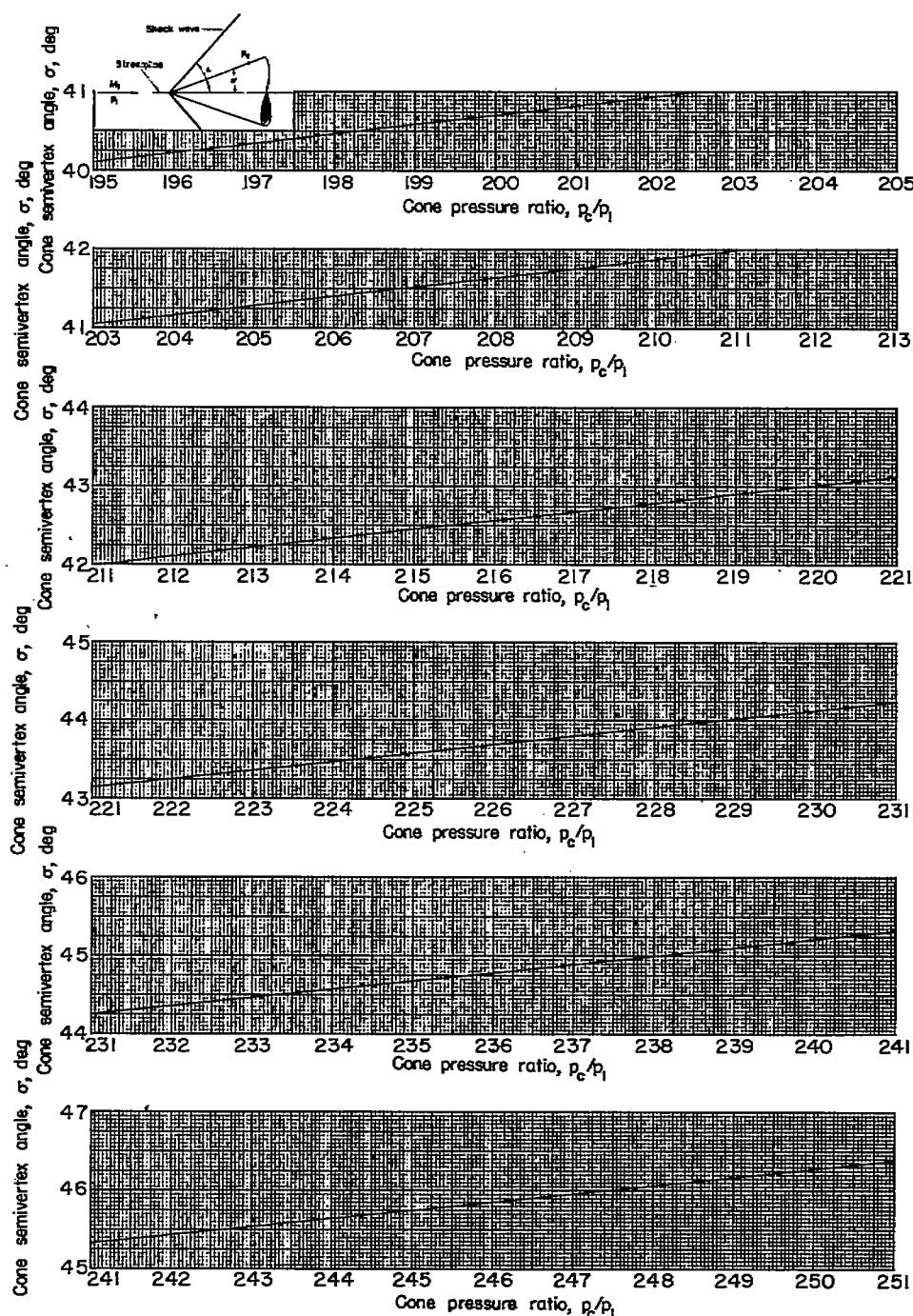


Figure 13.- Continued.



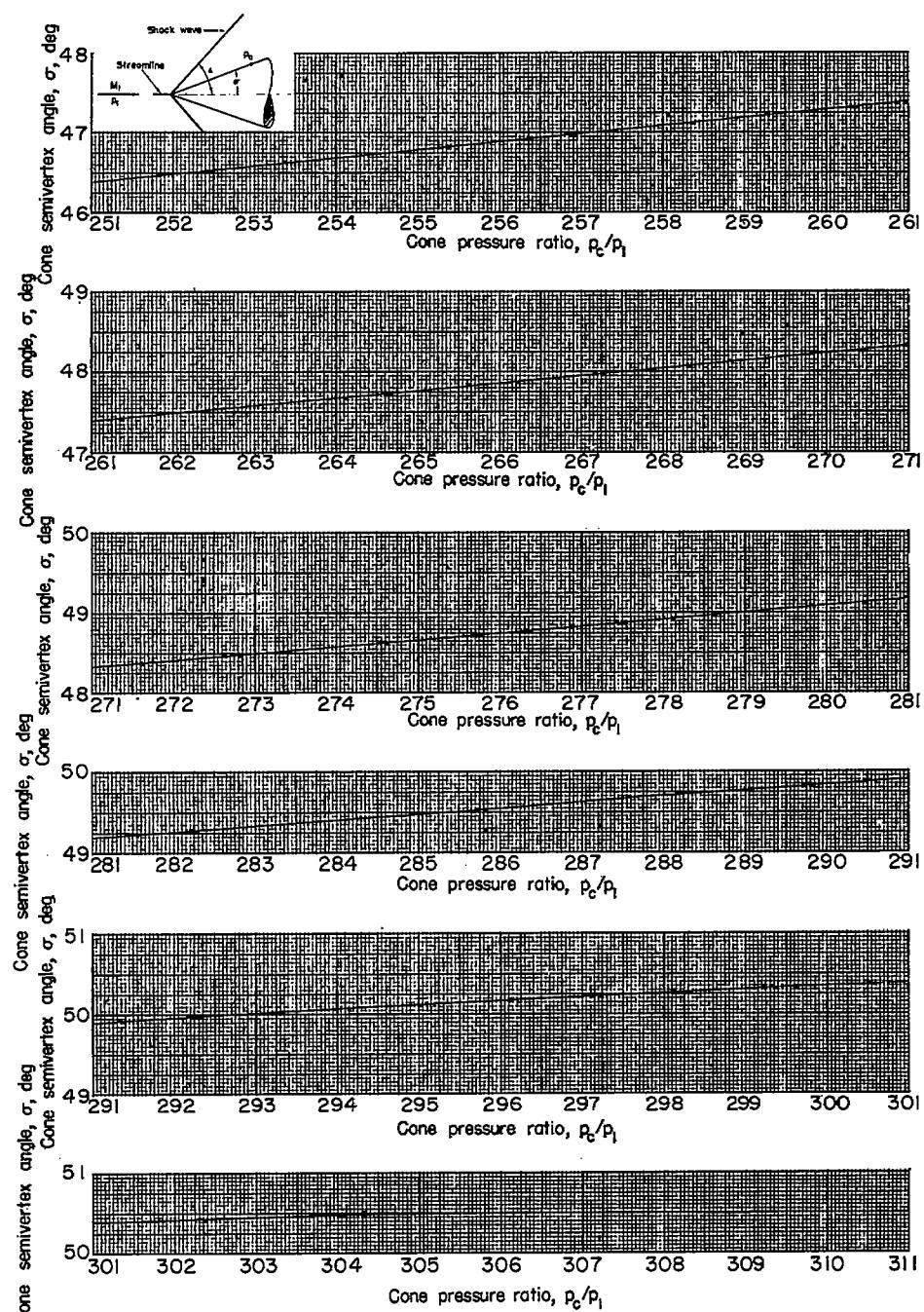
(e)  $p_c/p_1 = 146$  to 195.

Figure 13.- Continued.



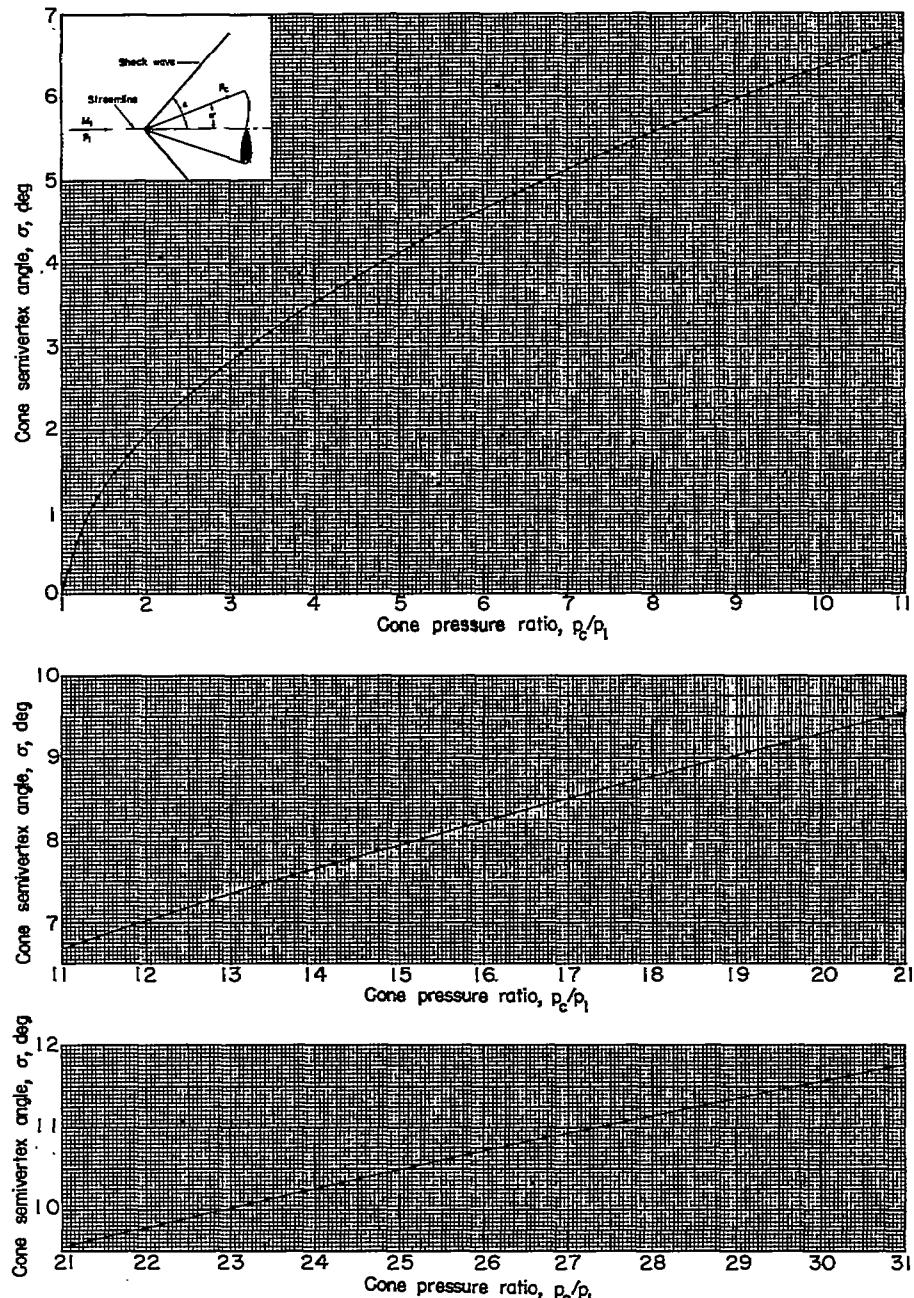
(f)  $p_c/p_1 = 195$  to  $251$ .

Figure 13.- Continued.



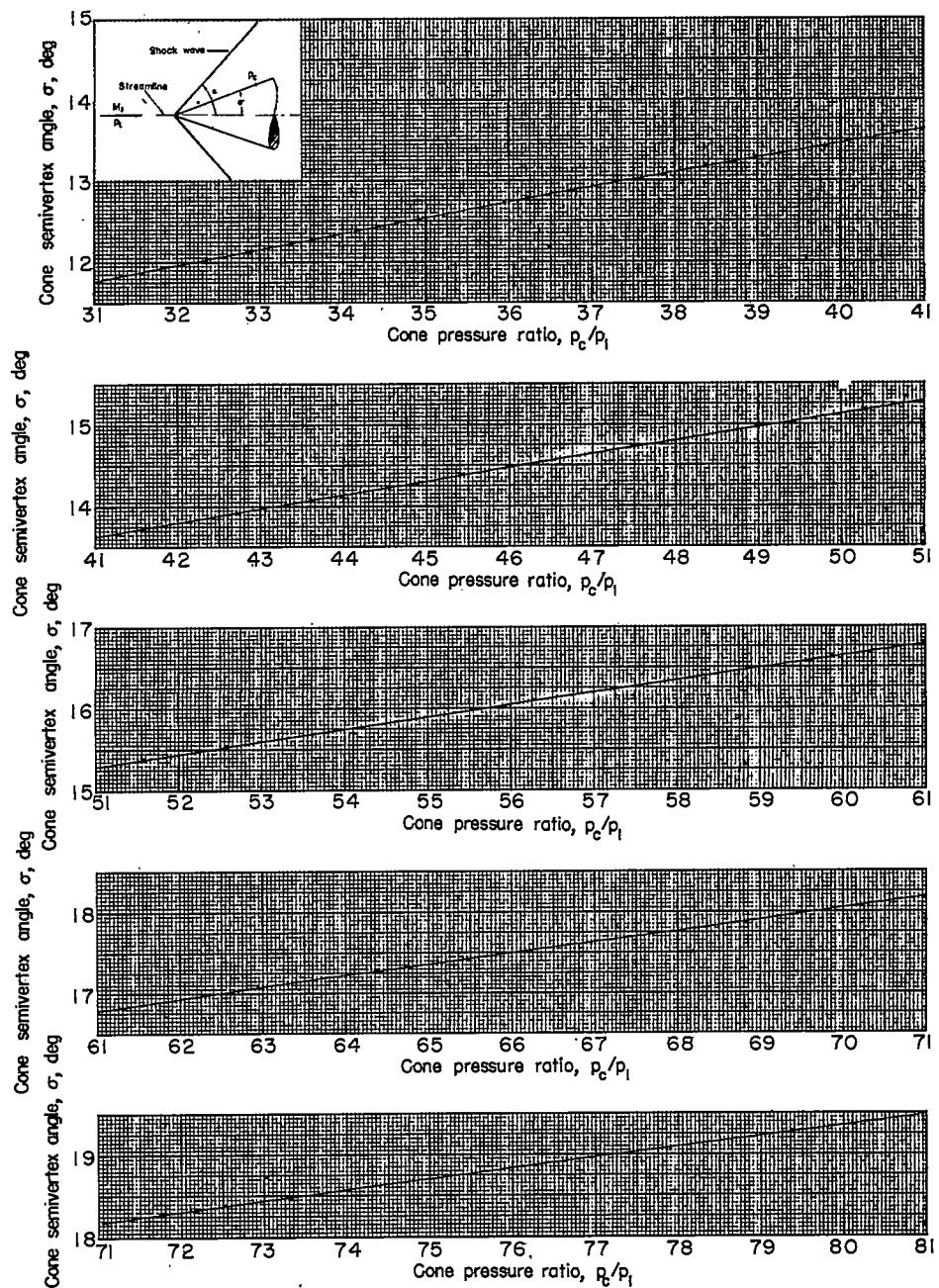
(g)  $p_c/p_1 = 251$  to  $311$ .

Figure 13.- Concluded.



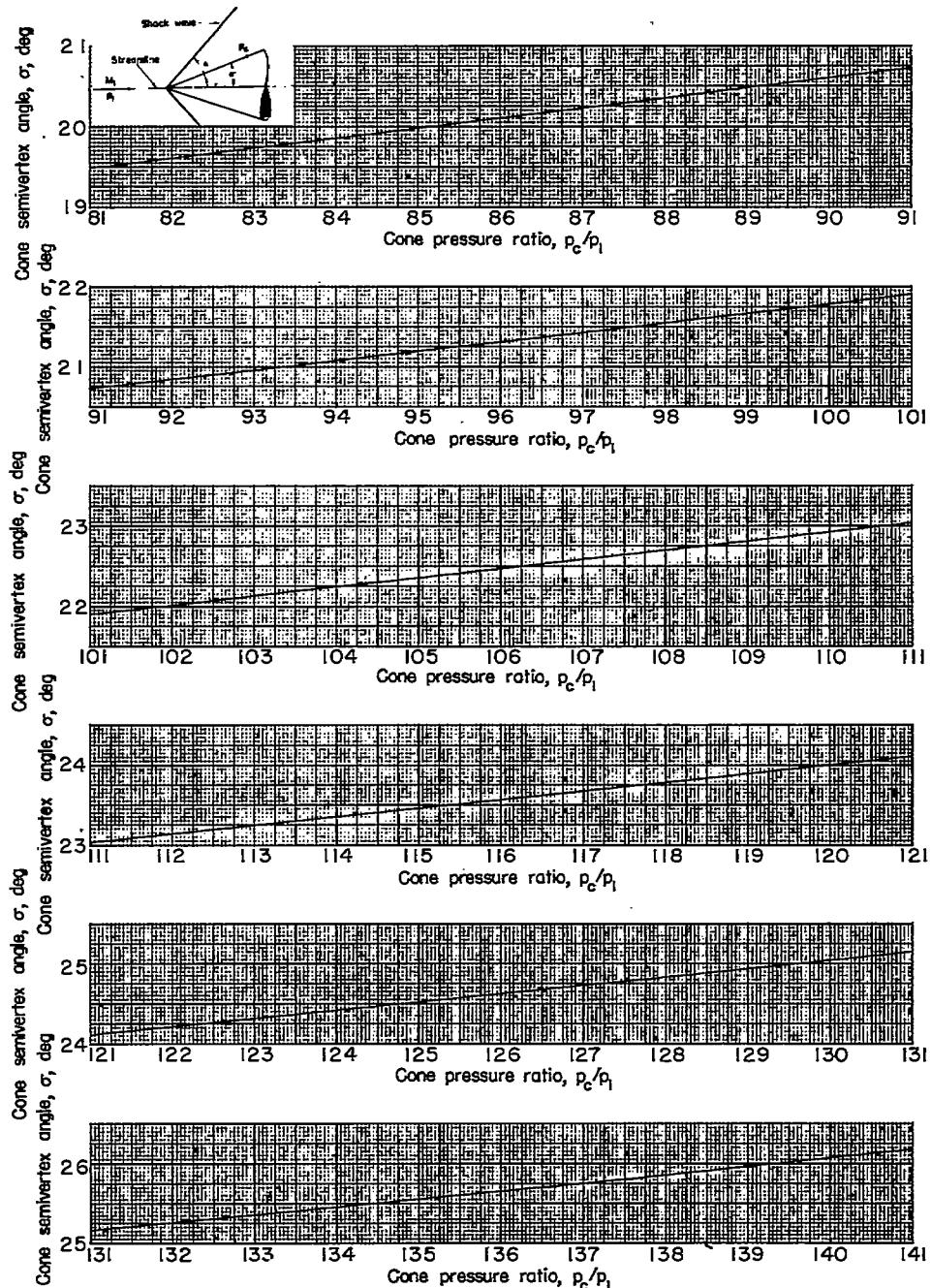
(a)  $p_c/p_1 = 1$  to 31.

Figure 14.- Variation of the cone pressure ratio  $p_c/p_1$  with cone semi-vertex angle.  $M_\infty = 20$ ;  $\gamma = 5/3$ .



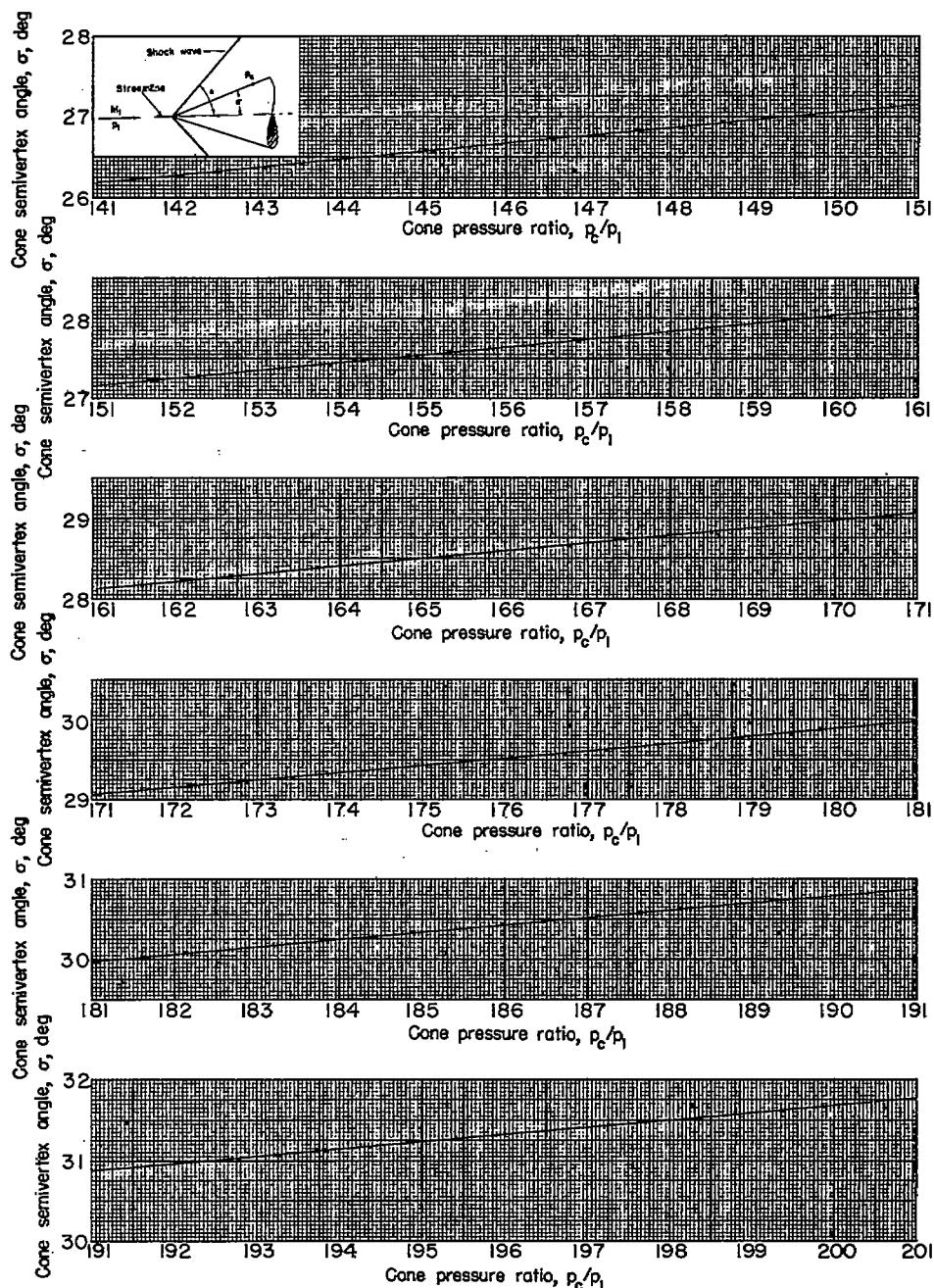
(b)  $p_c/p_1 = 31$  to  $81$ .

Figure 14--Continued.



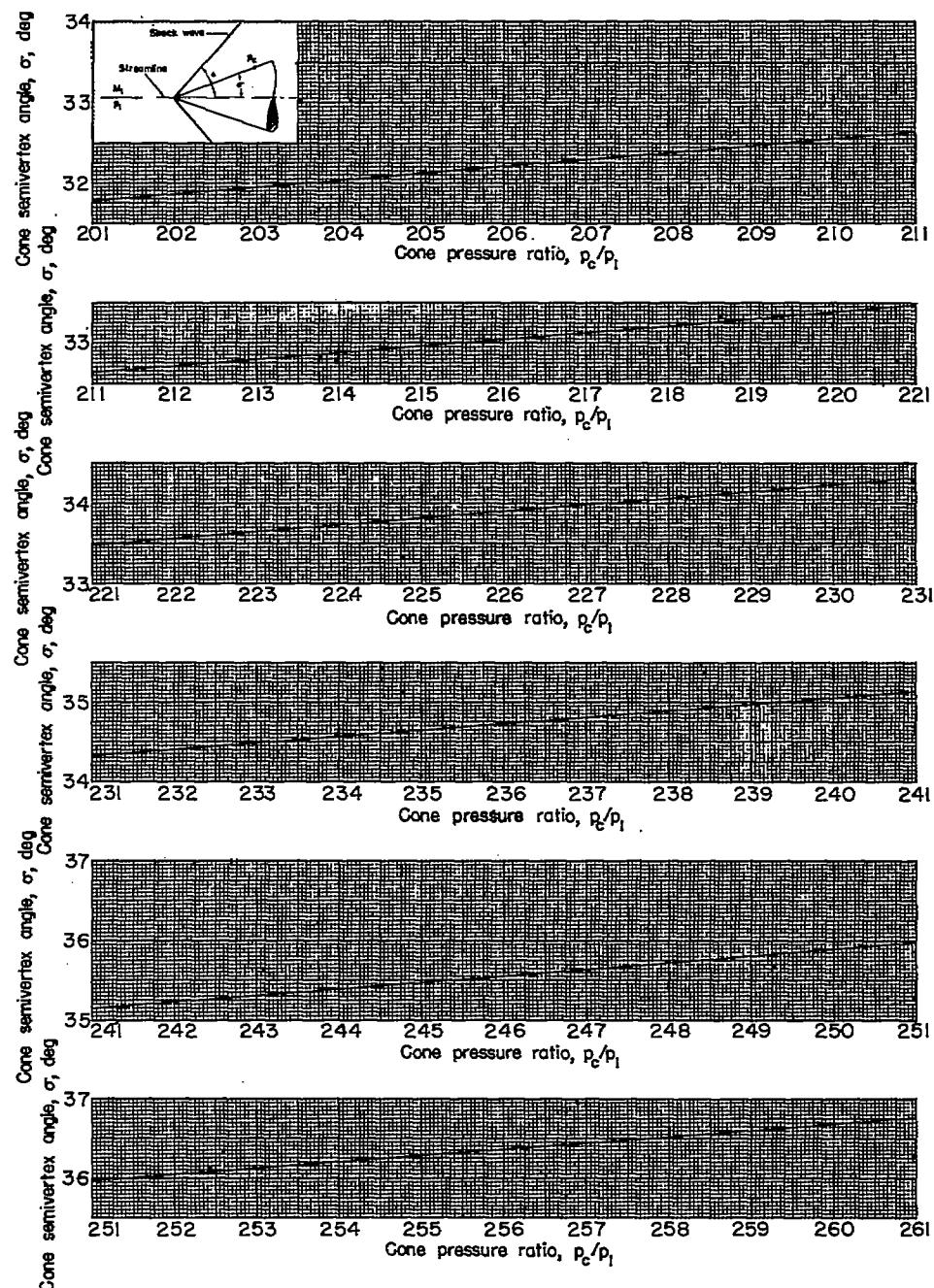
(c)  $p_c/p_1 = 81$  to 141.

Figure 14.- Continued.



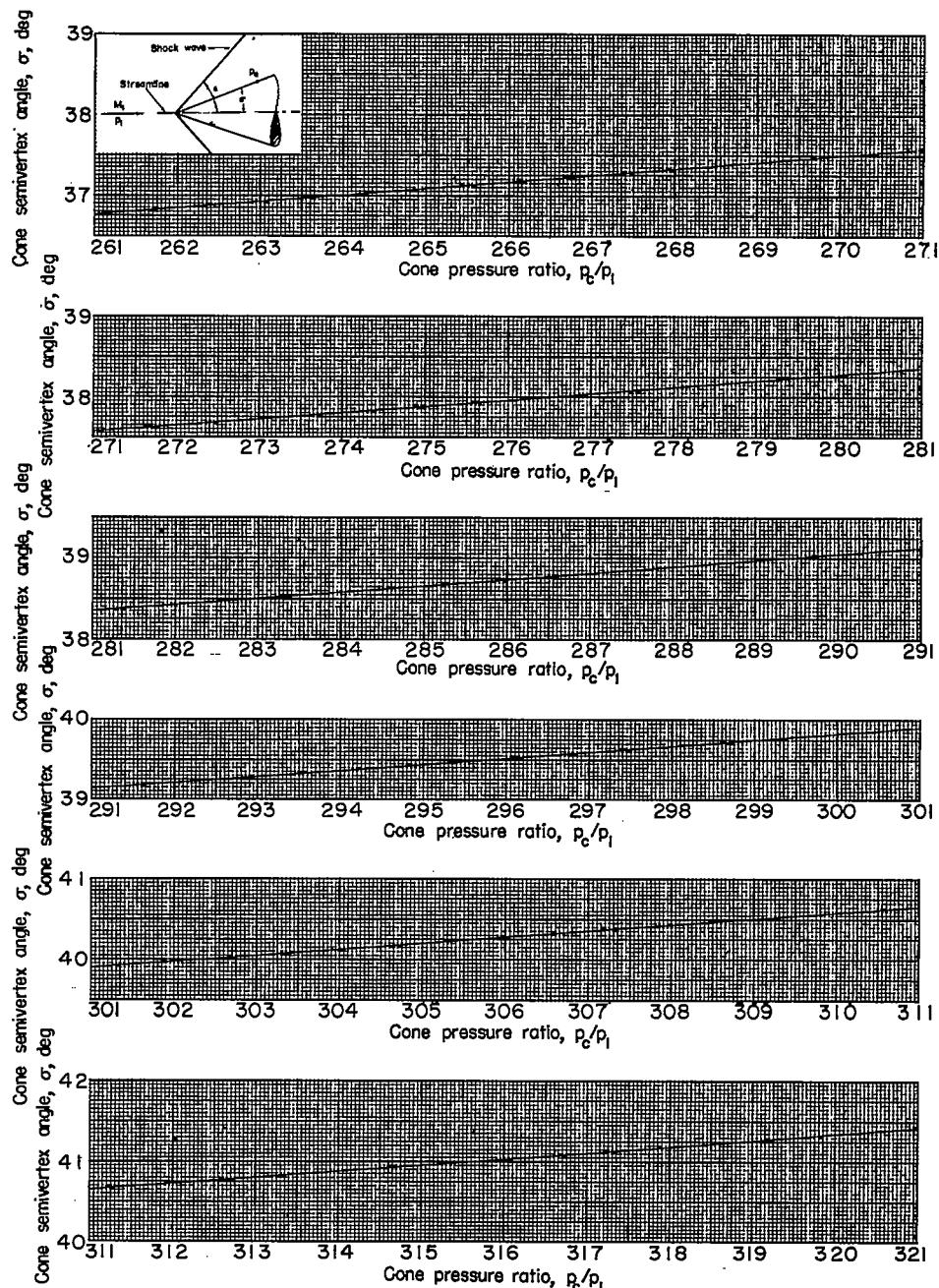
(d)  $p_c/p_1 = 141$  to 201.

Figure 14.- Continued.



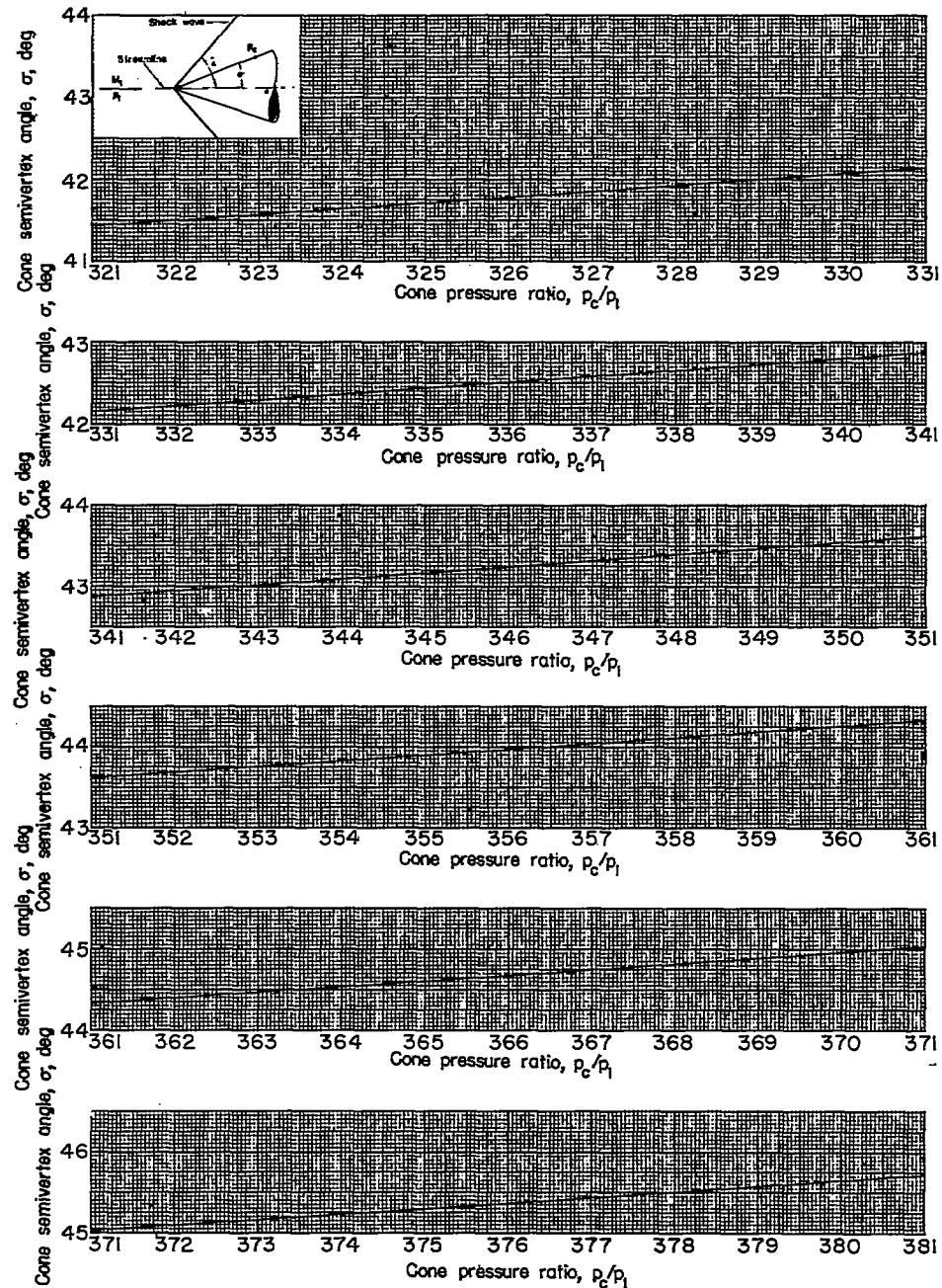
(e)  $p_c/p_i = 201$  to  $261$ .

Figure 14.- Continued.



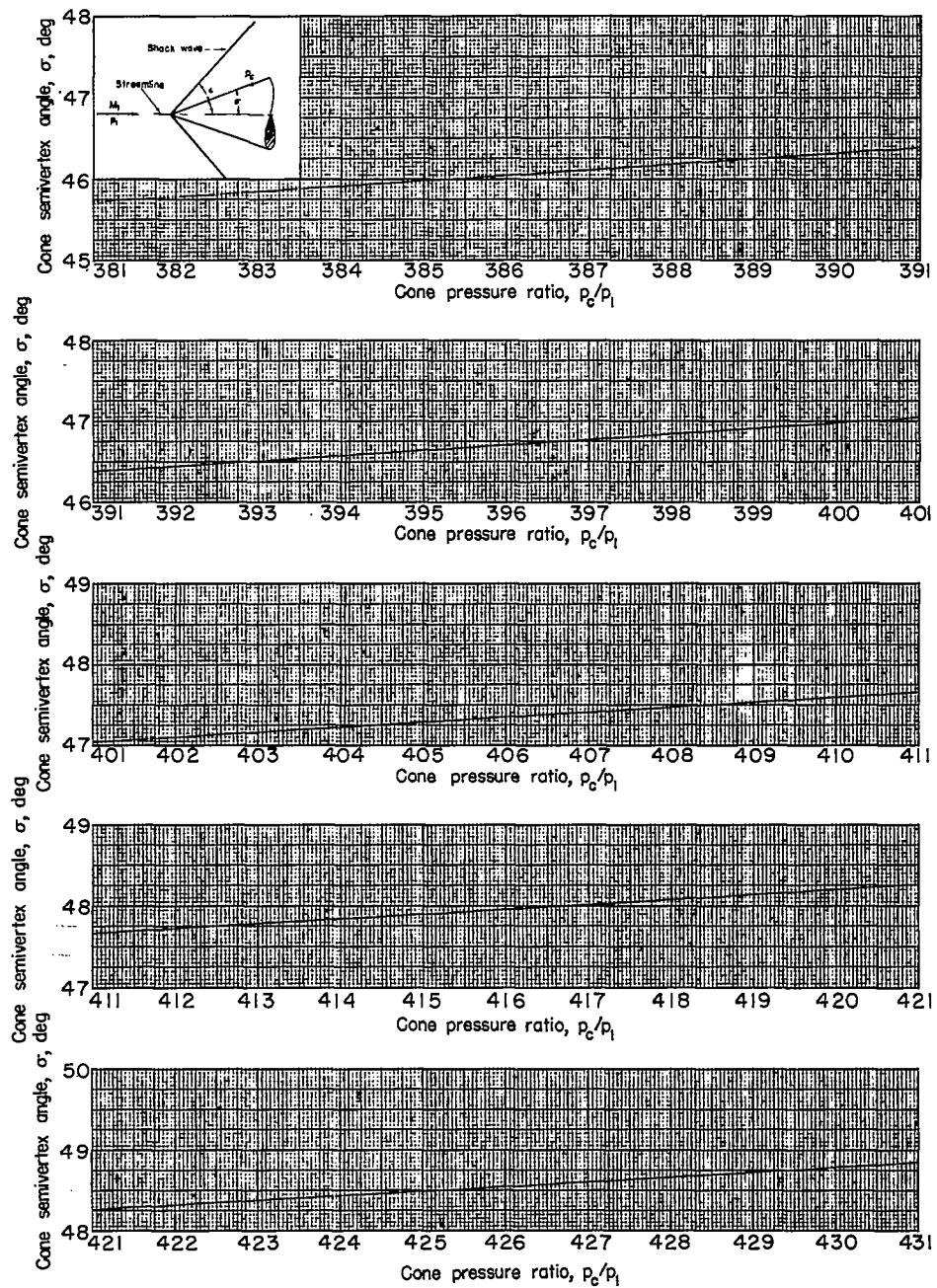
(f)  $p_c/p_1 = 261$  to  $321$ .

Figure 14.- Continued.



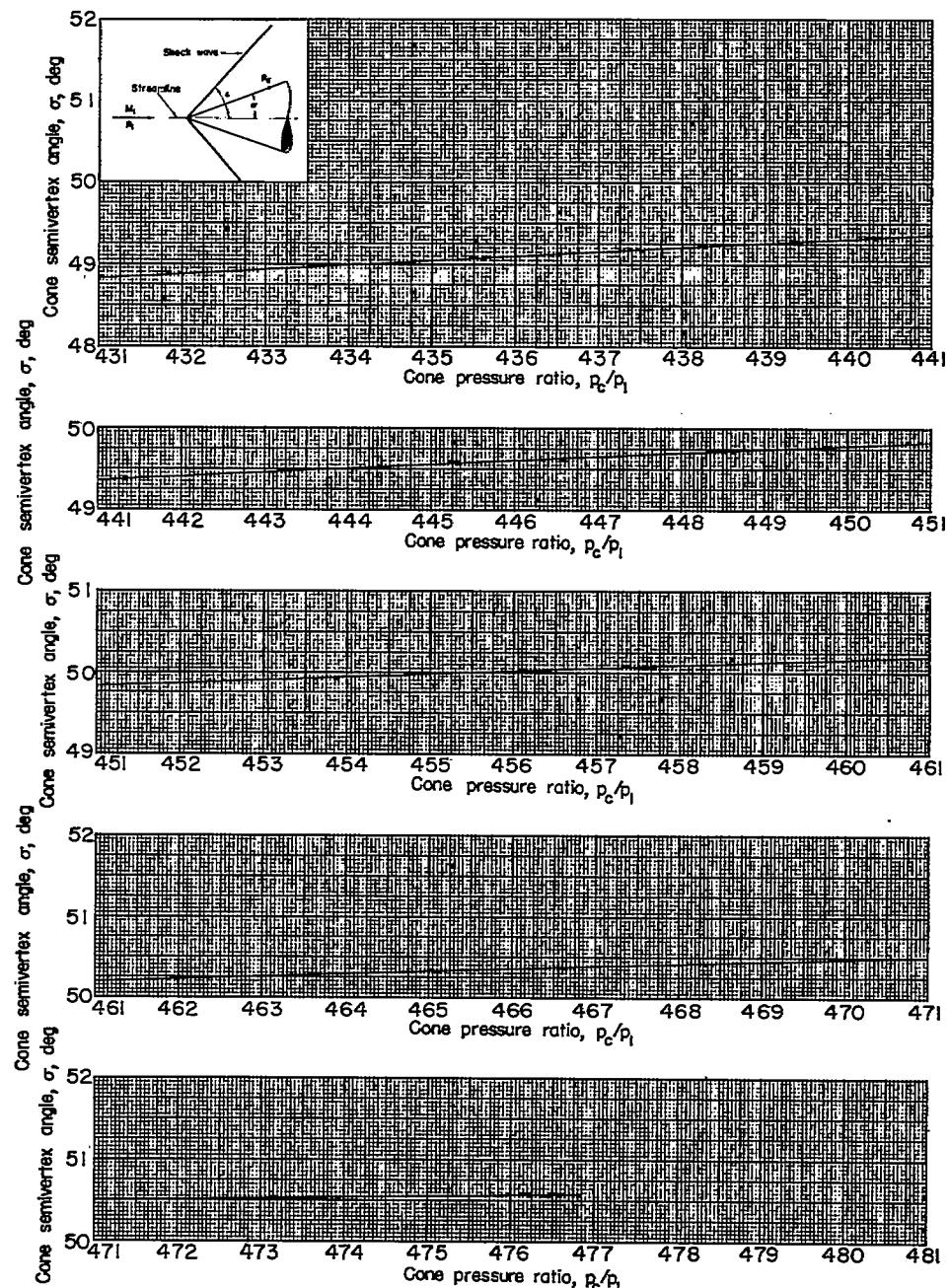
(g)  $p_c/p_1 = 321$  to  $381$ .

Figure 14.- Continued.



(h)  $p_c/p_1 = 381$  to 431.

Figure 14.- Continued.



(i)  $p_c/p_1 = 431$  to  $481$ .

Figure 14.- Concluded.

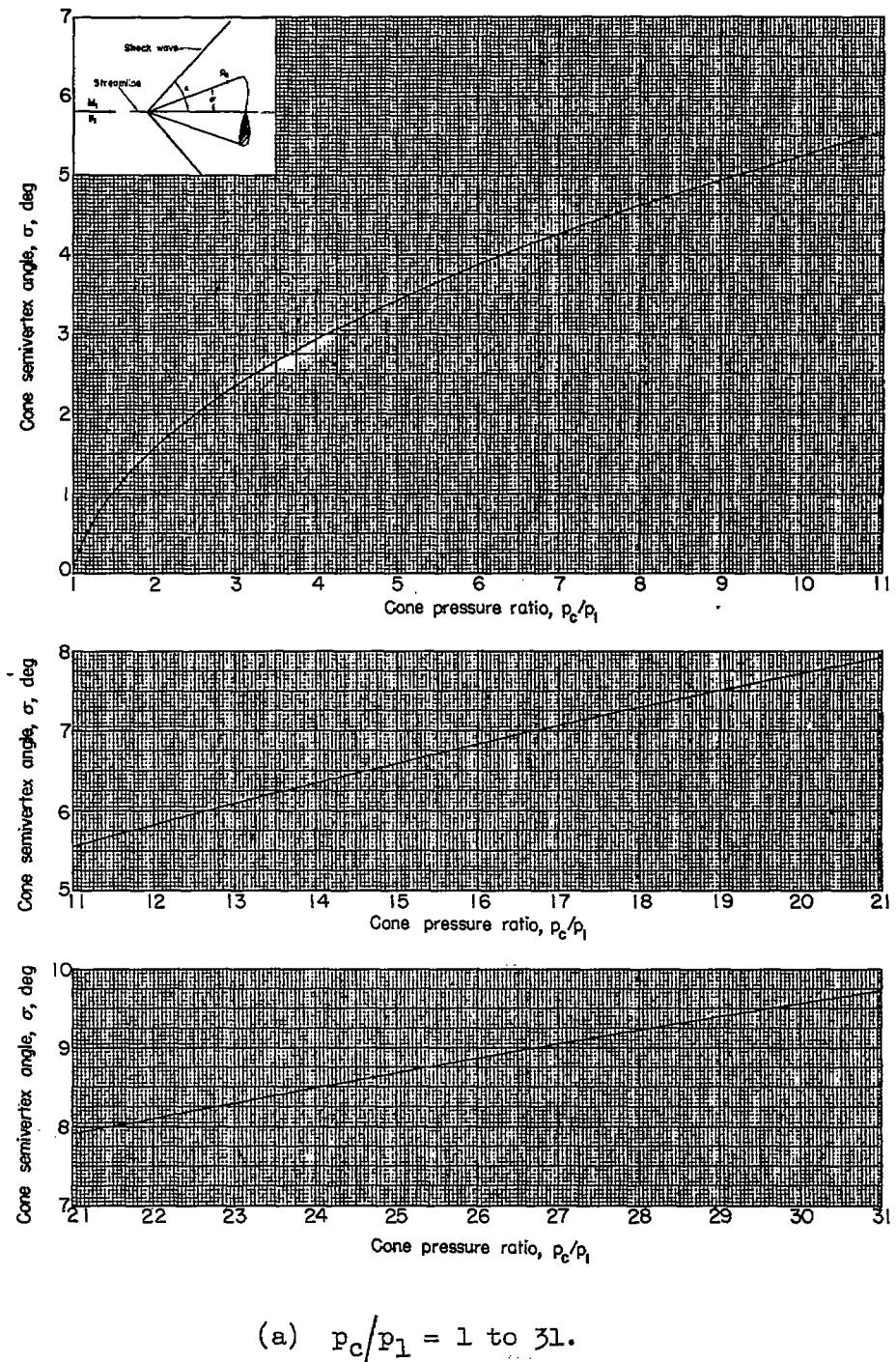
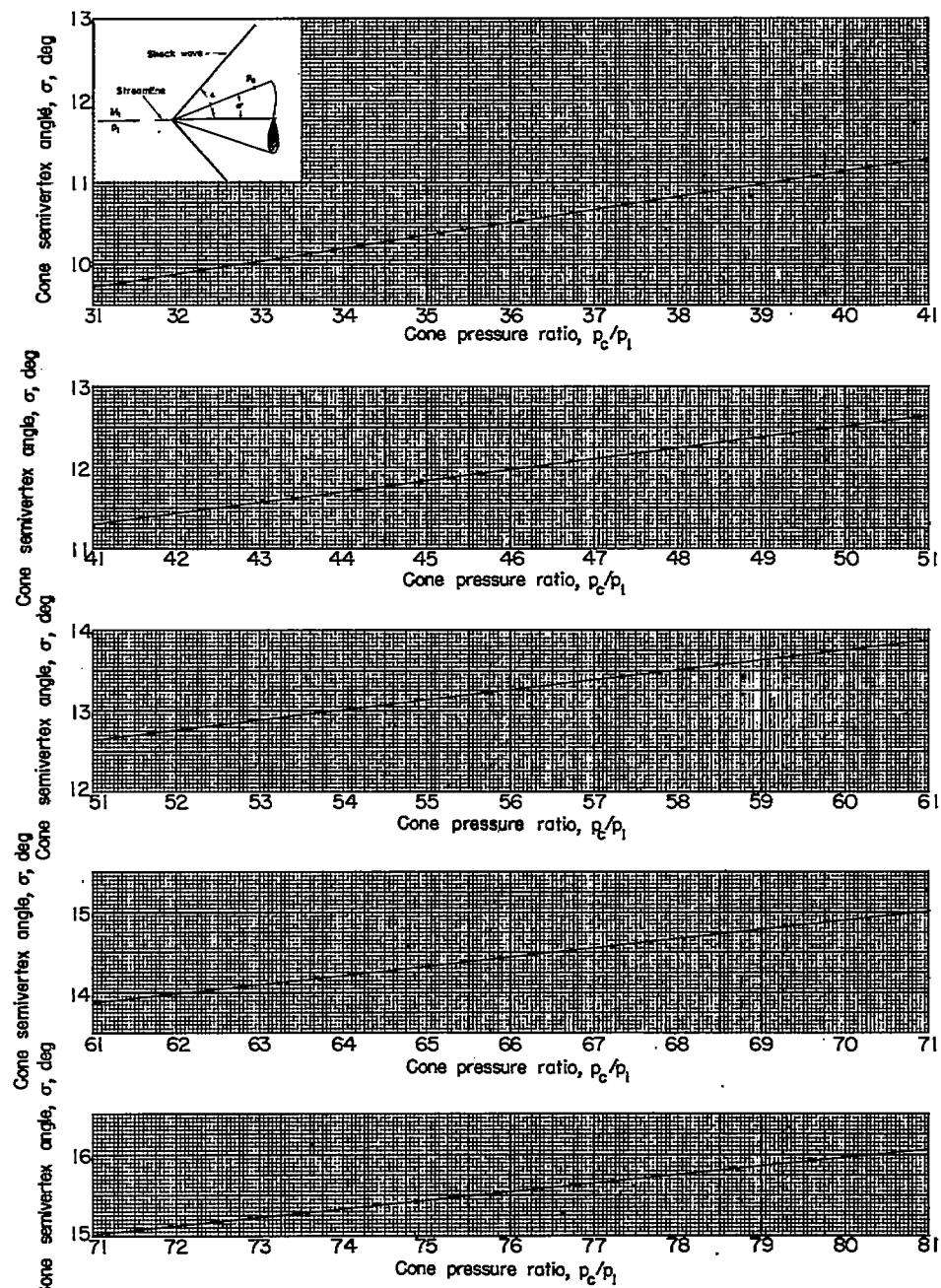
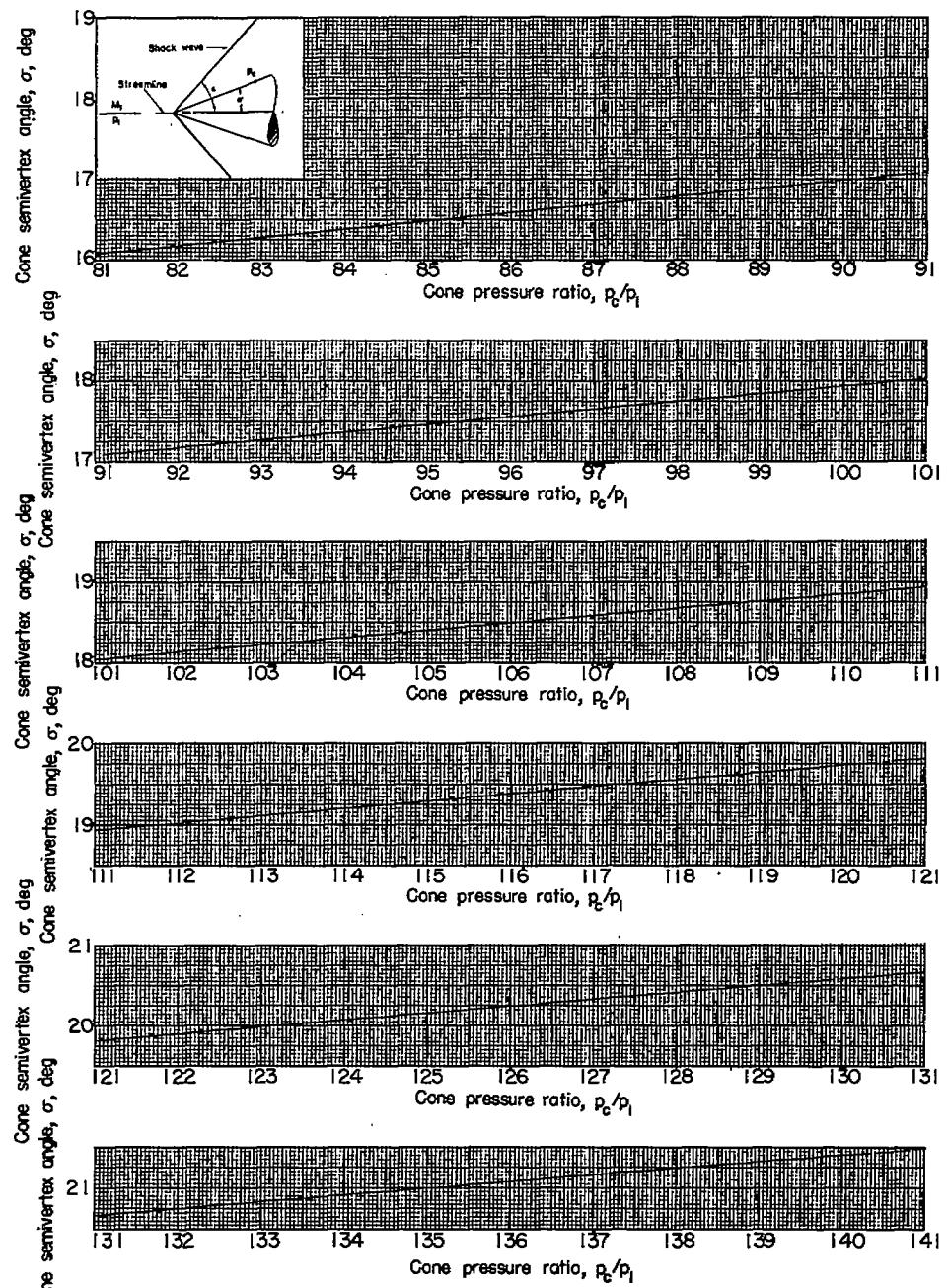


Figure 15.- Variation of the cone pressure ratio  $p_c/p_1$  with cone semi-vertex angle.  $M_1 = 24$ ;  $\gamma = 5/3$ .



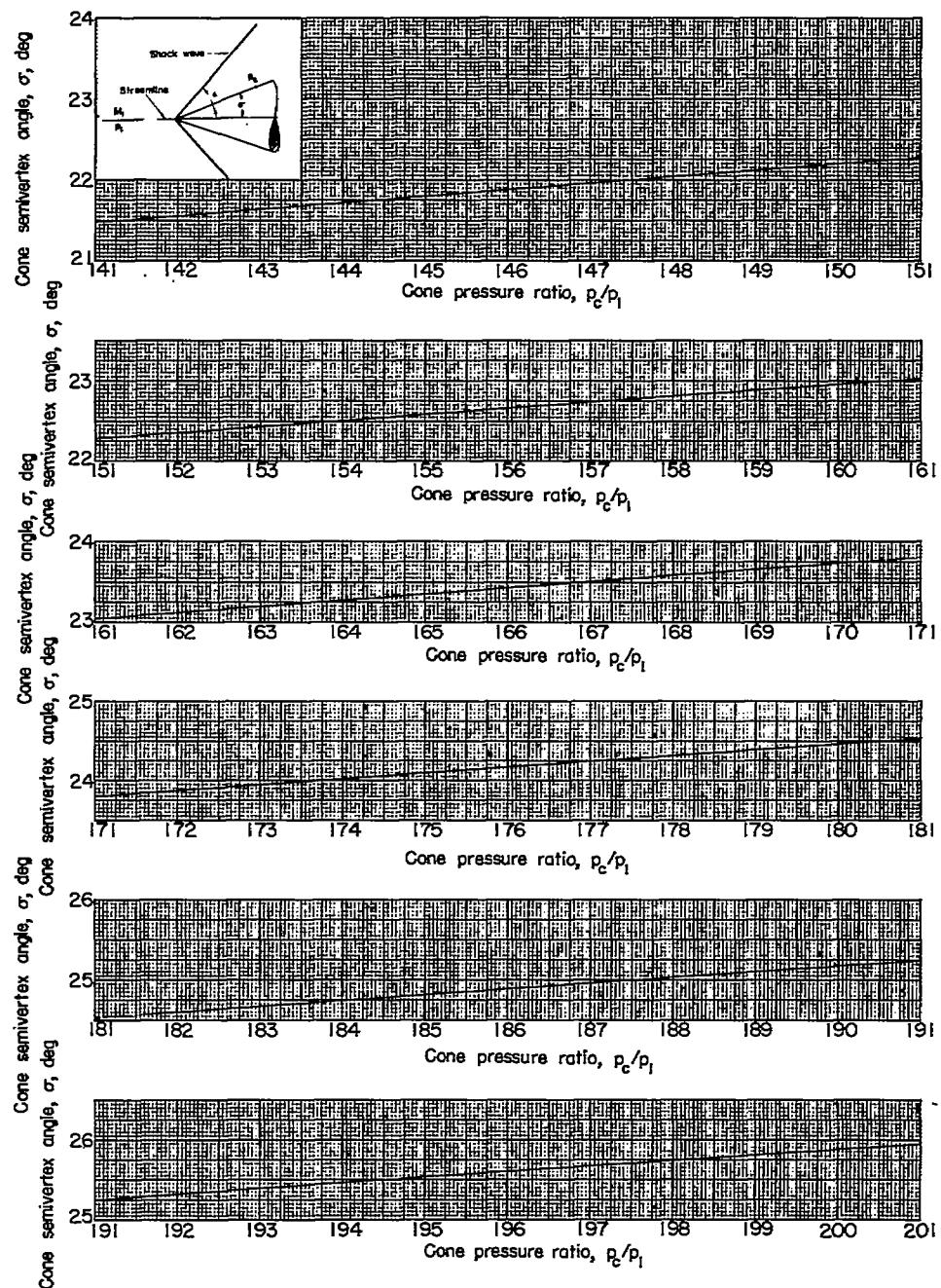
(b)  $p_c/p_1 = 31$  to  $81$ .

Figure 15.- Continued.



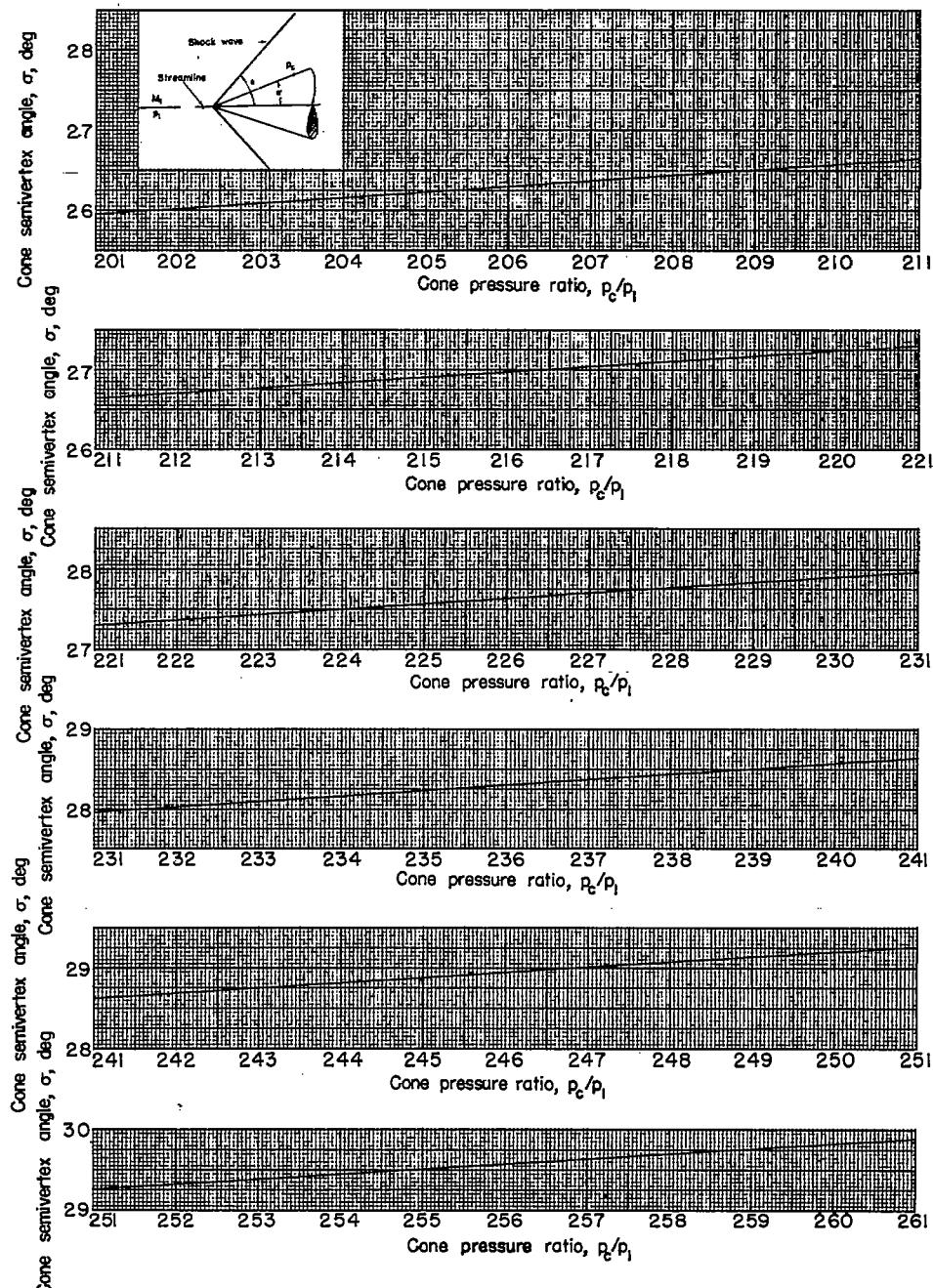
(c)  $p_c/p_1 = 81$  to  $141$ .

Figure 15.- Continued.



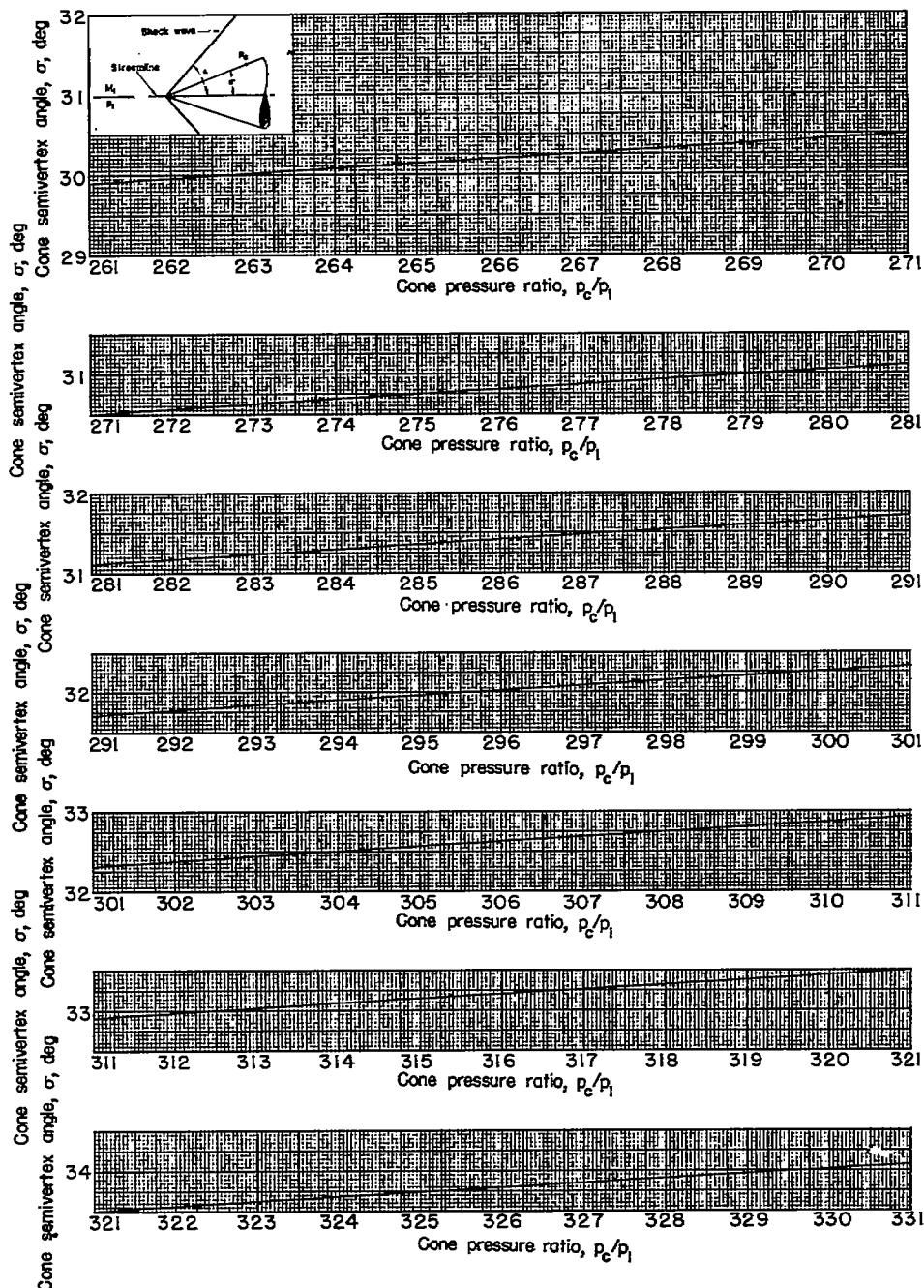
(d)  $p_c/p_1 = 141$  to 201.

Figure 15.- Continued.



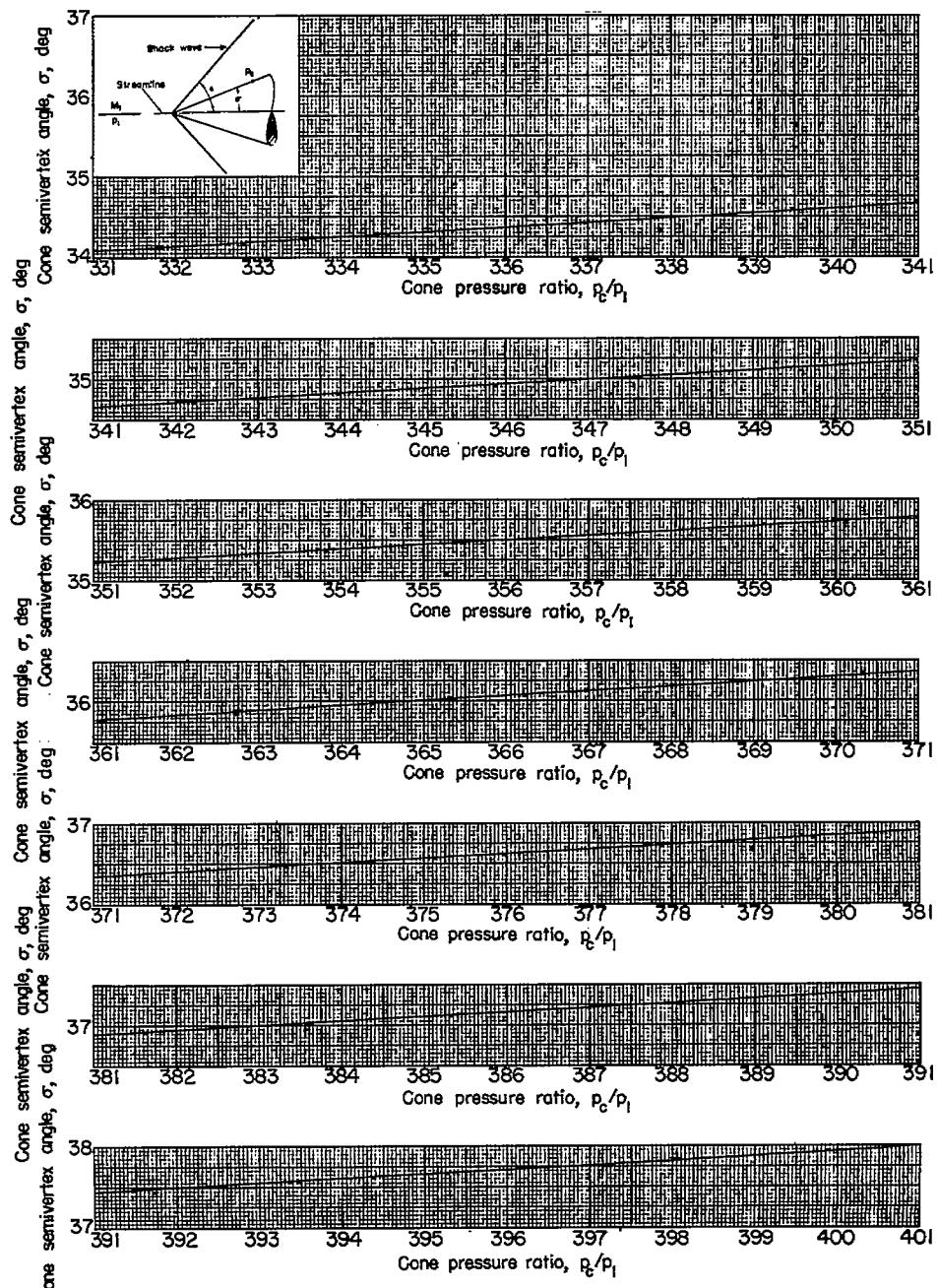
(e)  $p_c/p_1 = 201$  to 261.

Figure 15.- Continued.



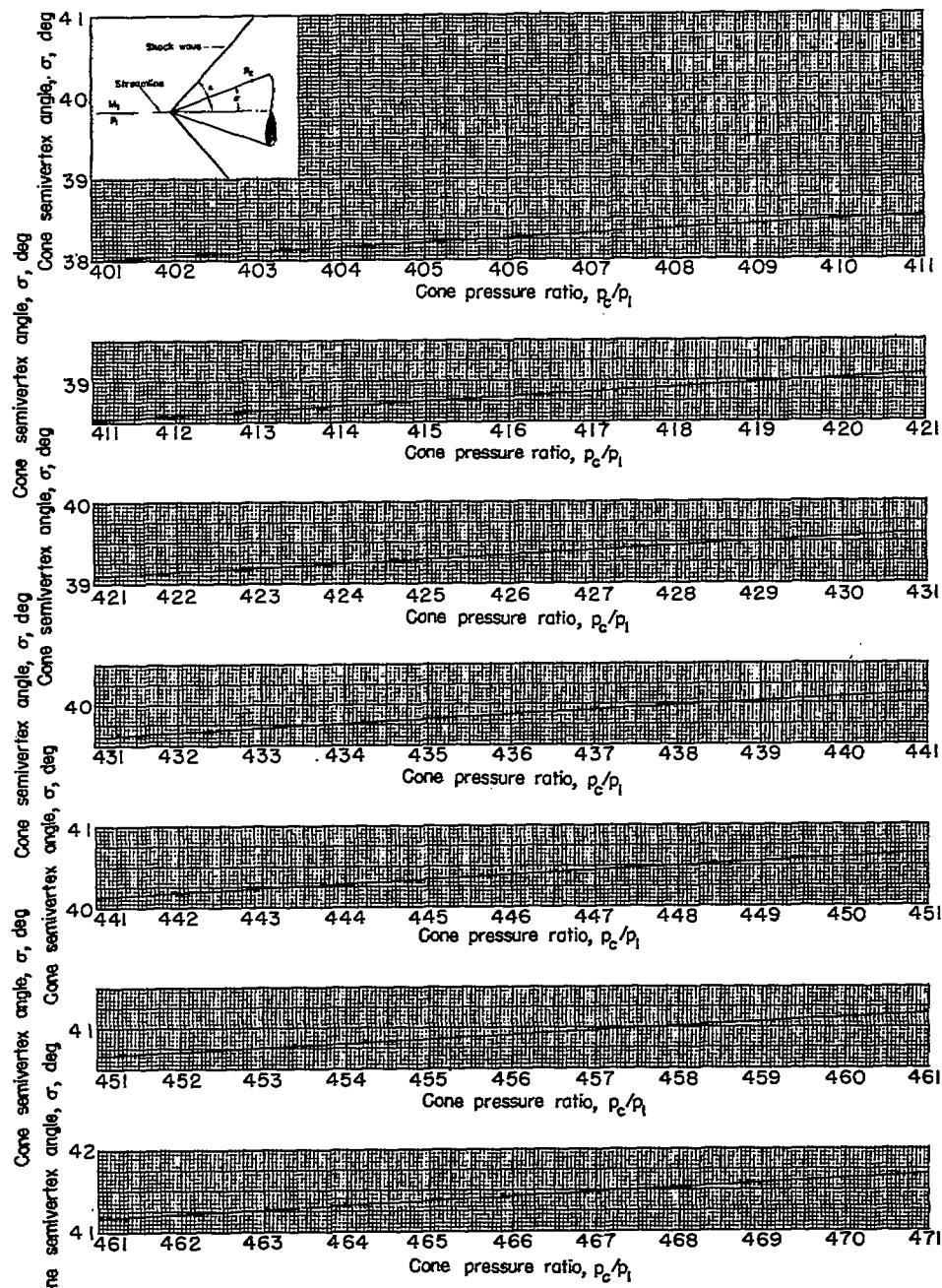
(f)  $p_c/p_1 = 261$  to 331.

Figure 15.- Continued.



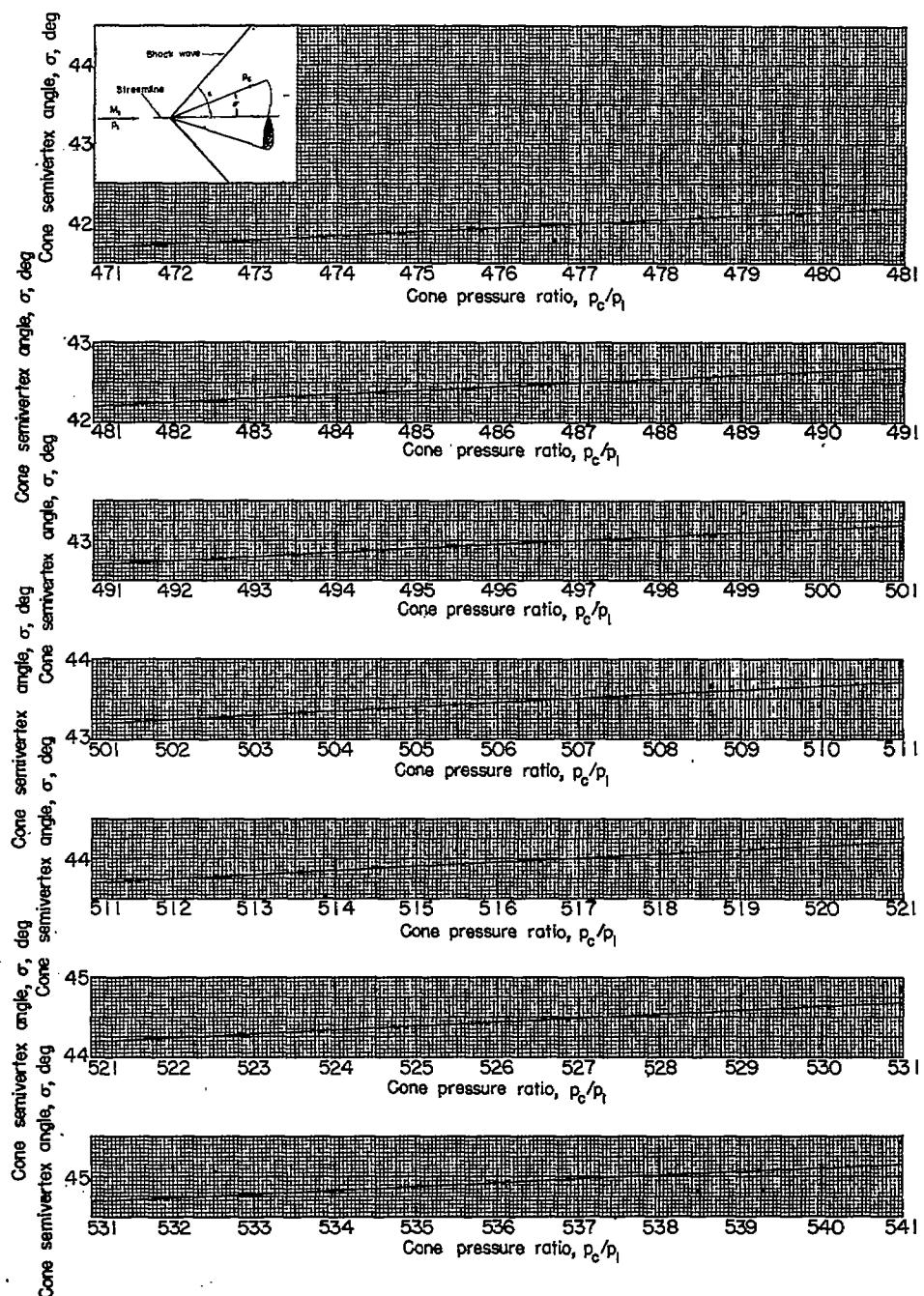
(g)  $p_c/p_1 = 331$  to 401.

Figure 15.- Continued.



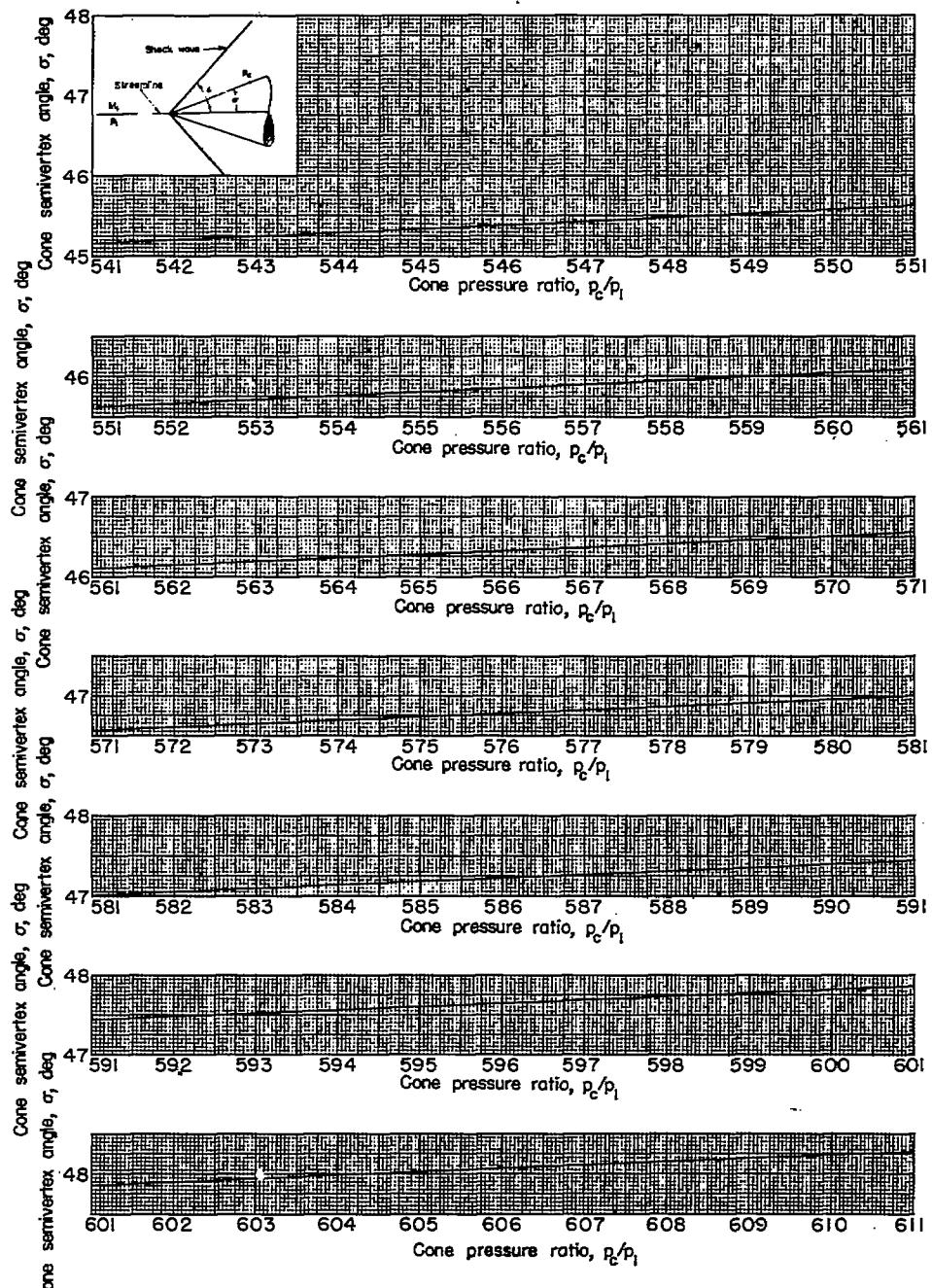
(h)  $p_c/p_1 = 401$  to  $471$ .

Figure 15.- Continued.



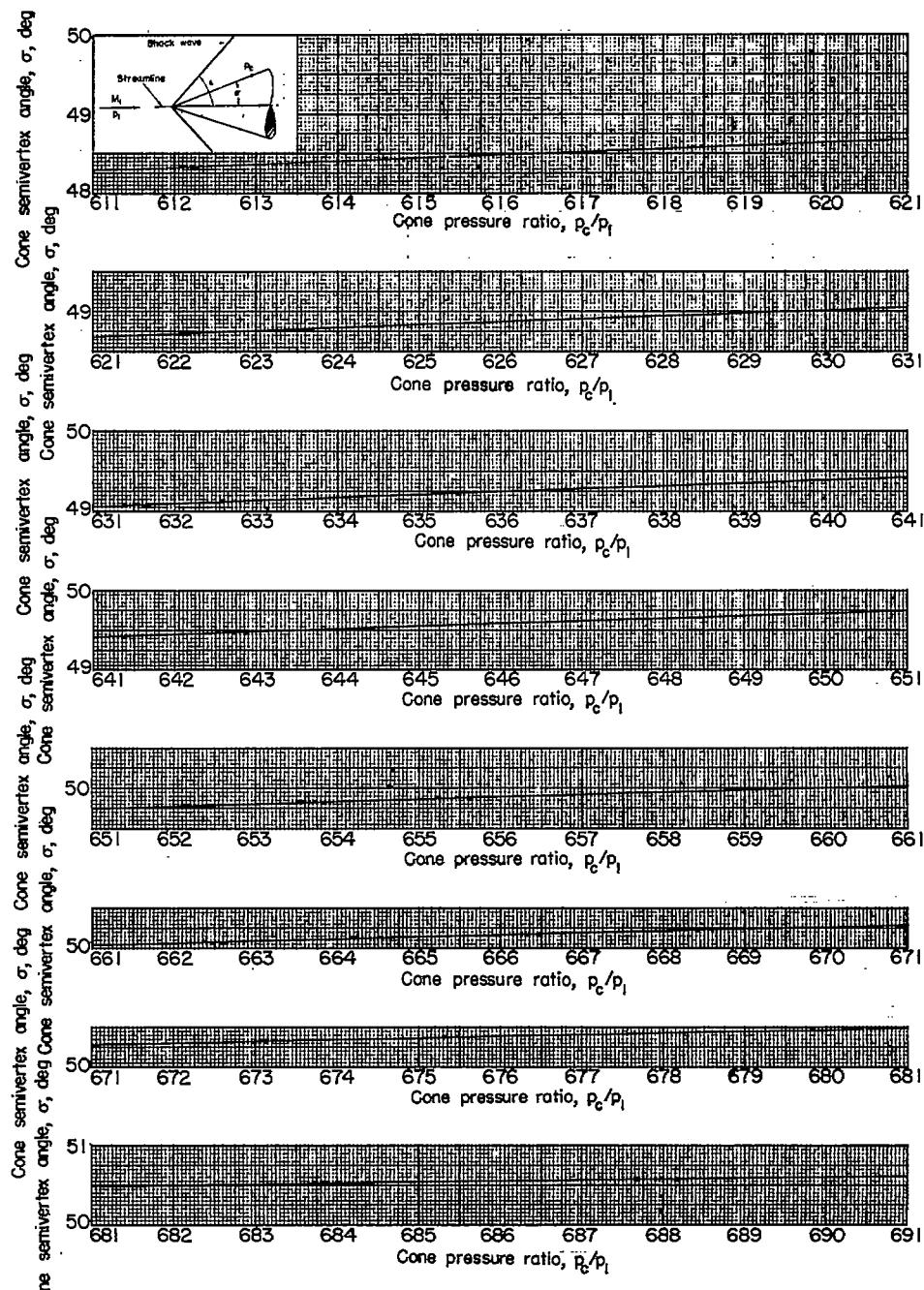
(1)  $p_c/p_1 = 471$  to  $541$ .

Figure 15.-- Continued.



(j)  $p_c/p_1 = 541$  to  $611$ .

Figure 15.- Continued.



(k)  $p_c/p_1 = 611$  to  $691$ .

Figure 15.- Concluded.

TABLE II.- TABULATION OF THE FUNCTION  $\frac{\sin z \sin(2n-1)z}{z}$  - Concluded

n	Value of the function $\frac{\sin z \sin(2n-1)z}{z}$ at values of $z$ of -																n
	4.80	4.82	4.84	4.86	4.88	4.90	4.92	4.94	4.96	4.98	5.00	5.02	5.04	5.06	5.08		
76	-.1638	.1770	-.1873	.1946	-.1990	.2002	-.1984	.1937	-.1860	.1758	-.1630	.1481	-.1312	.1126	-.0928	76	
77	.1391	-.1502	.1602	-.1689	.1763	-.1824	.1870	-.1903	.1922	-.1927	.1917	-.1895	.1859	-.1812	.1752	77	
78	-.1101	.1166	-.1228	.1286	-.1341	.1392	-.1439	.1482	-.1521	.1557	-.1508	.1615	-.1637	.1656	-.1670	78	
79	.0777	-.0776	.0774	-.0771	.0769	-.0766	.0763	-.0759	.0755	-.0751	.0747	-.0742	.0737	-.0732	.0726	79	
80	-.0430	.0350	-.0270	.0190	-.0111	.0034	-.0043	.0118	-.0192	.0264	-.0334	.0402	-.0468	.0532	-.0593	80	
81	.0070	-.0092	-.0252	.0408	-.0558	.0703	-.0841	.0972	-.1093	.1206	-.1308	.1399	-.1480	.1549	-.1606	81	
82	.0293	-.0530	.0757	-.0970	.1166	-.1342	.1497	-.1627	.1732	-.1810	.1860	-.1883	.1879	-.1847	.1789	82	
83	-.0647	.0944	-.1213	.1449	-.1644	.1795	-.1898	.1951	-.1954	.1908	-.1814	.1677	-.1499	.1288	-.1048	83	
84	.0980	-.1314	.1591	-.1802	.1939	-.1997	.1977	-.1878	.1707	-.1473	.1184	-.0855	.0499	-.0131	.0234	84	
85	-.1284	.1623	-.1865	.1999	-.2018	.1922	-.1719	.1422	-.1050	.0625	-.0173	.0280	-.0708	.1087	-.1396	85	
86	.1549	-.1857	.2019	-.2024	.1872	-.1579	.1170	-.0677	.0141	-.0397	.0894	.1312	-.1622	.1800	-.1836	86	
87	-.1766	.2006	-.2042	.1873	-.1518	.1017	-.0422	.0206	.0803	-.1308	.1673	-.1863	.1864	-.1678	.1328	87	
88	.1929	-.2062	.1933	-.1560	.0996	-.0313	.0398	-.1048	.1553	-.1854	.1914	-.1731	.1334	-.0777	.0134	88	
89	-.2033	.2023	-.1698	.1113	-.0362	.0494	-.1150	.1875	.1990	-.1881	.1599	-.0964	.0252	-.0485	.1130	89	
90	.2075	-.1891	.1354	-.0569	-.0312	.1122	-.1707	.1962	-.1844	.1382	-.0668	-.0156	.0935	-.1521	.1810	90	
91	-.2053	.1672	-.0922	-.0024	.0952	-.1653	.1974	-.1849	.1314	-.0496	-.0417	.1220	-.1734	.1852	-.1554	91	
92	.1968	-.1375	.0430	.0615	-.1485	.1954	-.1905	.1360	-.0469	-.0528	.1368	-.1836	.1815	-.1323	.0496	92	
93	-.1823	.1015	-.0090	-.1153	.1853	-.1983	.1512	-.0593	-.0489	.1404	-.1879	.1779	-.1145	.0180	-.0818	93	
94	.1623	-.0608	-.0604	.1591	-.2015	.1736	-.0865	-.0294	.1329	-.1888	.1785	-.1069	.0000	-.1047	.1710	94	
95	-.1372	.0173	.1079	-.1892	.1952	-.1248	.0067	.1121	-.1851	.1844	-.1117	-.0032	.1145	-.1787	.1718	95	
96	.1080	.0270	-.1484	.2028	-.1673	.0586	-.0741	.1720	.1927	-.1284	.0089	.1122	-.1815	.1698	-.0639	96	
97	-.0754	-.0700	.1793	-.1989	.1207	.0157	-.1422	.1969	-.1541	.0369	.0968	-.1800	.1754	-.0821	-.0474	97	
98	.0406	.1098	-.1985	.1779	-.0606	-.0879	.1862	-.1817	.0784	.0656	-.1713	.1818	-.0935	-.0437	.1542	98	
99	-.0045	.1446	.2049	-.1414	-.0061	.1478	-.1986	.1294	.0161	-.1494	.1907	-.1170	-.0252	.1493	-.1266	99	
100	-.0318	.1727	-.1981	.0927	.0722	-.1872	.1772	-.0509	.1067	.1913	-.1487	.0000	.0000	.0000	.0000	100	